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The MODERN HOSPITAL

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The apparatus consists of (1) Caloris Bottle for maintaining even temperature, (2) collapsible stand, (3) with adjustable collars attachable to any size bed post, (4) distributing tube, (5) four individual screw clamps, (6) sight drips, (7) connecting tubes, (8) sight feeds, (9) instillation tubes.

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THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IX *August, 1917* No. 2

THE ROCKEFELLER INSTITUTE WAR DEMONSTRATION HOSPITAL

Interesting and Valuable Demonstration of a Unit Portable Military Hospital—Double Walls Demanded for Modern War Hospitals—Special Features of Superiority

By CHARLES BUTLER, of Butler & Rodman, Architects, New York

IN announcing the intention of the Rockefeller Institute to erect on its grounds at Sixty-sixth Street and Avenue A, New York, a war demonstration hospital, where the Carrel-Dakin method of treating infected wounds could be practiced and the surgical methods worked out and successfully applied at the military hospital at Compiegne, France, by Dr. Alexis Carrel and Dr. H. D. Dakin could be demonstrated, Dr. Simon Flexner stated that the object of the enterprise was three-fold:

1. To make available to the patients this improved method of treatment.

2. To demonstrate and teach to American surgeons who may be enrolled for military service measures for the treatment of infected wounds, especially by the Carrel-Dakin method.

3. To test the feasibility of a unit portable military hospital designed by Mr. Charles Butler, of New York, who, working under the French War Department, has made a thorough study of the military units which have been developed for use in France and England.

Pursuant to the purpose indicated in the last paragraph, the hospital has been designed exactly as base hospitals are being designed today in France, the only exceptions being that, in view of the existence at the Rockefeller Institute of a complete power plant, it was decided to take steam and electricity from this rather than build an independent plant, and that in the laboratory building, which is of necessity very considerably developed, because of the special purpose of the hospital, we have used city gas instead of depending on lamps as must usually be done in a base hospital.

The plan of the hospital calls for only two wards, each containing twenty-four beds in the open ward, with the possibility of increase to thirty without too great crowding, one bed in a quiet room for each ward, and four beds in a small isolation pavilion, where cases which develop contagious disease after admission may be treated. In a hospital of this small capacity, at most sixty-six beds, a steam kitchen, laundry, etc., would not ordinarily be installed, but in view of the special object of this undertaking these have been included, the capacity being in each case reduced to the minimum. It is interesting to note in this connection that the French army medical authorities consider that steam laundries and kitchens are economical for any number of beds over 300. As the base hospital of today tends towards a capacity of 1,000 beds rather than 500, it may safely be assumed that it will always need high-pressure and low-pressure steam and electricity from its own existing plants.

The problem of water supply and sewage disposal, always a vital one in hospital work, is of course simplified by the location in the midst of the city. In a base hospital, if no city system is available, a Waring or similar disposal system is to be recommended, and many are being installed on the front.

The site available for the hospital was an L-shaped lot, the vertical leg 460 feet long and 170 feet wide, running north and south along Avenue A, and the horizontal, 60 feet wide by 320 feet long, running east along Sixty-fourth Street.

The main entrance to the hospital, on Avenue A, just above Sixty-fourth Street, leads into the ambulance court. Immediately on the left is the visitors' entrance to the administration building,

Rockefeller Institute Base Hospital East 64 and Ave A
Made July 1, 1917 Butler and Rodman Archts.
Mare Ediltg and San Bldrs pro

Fig. 1. General view of the Rockefeller Institute Base Hospital, East Sixty-fourth street and Avenue A, New York.

1. Administration.
2. Reception and discharge.
3. Operating.
4. Laboratory and pharmacy.
5. Ward.
6. Ward.
7. Isolation.
8. Recreation.
9. Mess.
10. Kitchen.
11. Laundry.
12. Stores.
13. Orderlies.
14. Nurses.

which runs north along Avenue A and is connected at its north end to the laboratory building, which also runs north and south. East of the administration building, forming the north side of the court, is the reception and discharge building, in front of which the ambulances draw up to discharge their loads of wounded. On the south side of the court along Sixty-fourth Street is the orderlies' barracks, and east of this, in the L, are the nurses' building running east along Sixty-fourth Street, and the maids' building running north and south on the flat roof on one of the institute buildings.

The east side of the ambulance court is closed by the isolation building. To the north of the reception building and parallel to it, connected to it by a closed corridor, is the operating building. This closed corridor runs west to the administration building and east to the main north-and-south corridor, which is closed north from this point to where it turns west to give access to the ward buildings. The southern part of this corridor, which leads to the isolation building and thence to the nurses' and orderlies' quarters, is open at the sides, and the same is true of the northern portion leading to kitchen, laundry, and stores building, closed corridors being provided only where patients have to pass from one building to another.

The two wards are thus placed between the east corridor and the laboratory building, connected to the transverse corridor at their north or service ends and free at their south ends.

To the north of the transverse corridor and looking out on the service court are the mess hall for nurses, orderlies, and maids, and the recreation building for convalescent patients. On the east side of this court is the kitchen and on the north the laundry, while the stores building occupies the northern portion of the west side, balancing the recreation building, the service entrance from Avenue A being between those two buildings. The grouping of kitchen and laundry in close proximity to the mess hall and ward buildings reduces to the minimum the labor required for the constant transport of food and clean and soiled linen. The frequency of this transport as contrasted with the infrequent trips of patients between the reception and operating buildings and the wards was the determining factor in this arrangement.

In all war hospitals, ease of communication between buildings is an essential, and all transport must be by wheeled vehicles, food cars, stretchers, soiled linen cars, etc., for every war hospital will always be short-handed, and the difficulty of oper-

ating must be reduced to the minimum; hence the uniting of all buildings by slatted walks and the elimination of steps, differences of grades being taken up by inclines.

The ward buildings should be well separated from the quarters reserved for nurses, maids, and orderlies, so that when the latter are off duty they

Fig. 2. Ward in the Rockefeller Institute Base Hospital.

may be able to make a reasonable amount of noise without disturbing the patients.

In the plan of this hospital we should have preferred for this reason to place the isolation building rather further from the orderlies' quarters if it had been possible.

All of the general statements in regard to the grouping of buildings would apply equally well to a field hospital, and the walkways, even if it is impracticable to cover them, are an absolute necessity in the sea of mud in which one lives at the front.

The details of the various buildings are about as follows:

The administration building contains the general waiting room for visitors, with the telephone exchange, a coat and toilet room for visitors, and offices for clerks, executive officer, superintendent of nurses, surgeon on duty and chief surgeon. Adjoining this the laboratory building contains a demonstration and lecture room, record officer's room, coat room and storage, the pharmacy with its waiting room for orderlies, and the chemical and bacteriological laboratories. In addition to the gas already mentioned, the laboratories are supplied with water and with electricity for both light and power throughout.

The receiving and discharging pavilion is in its present development a product of the war, for all wounded must be cleaned before being admitted to the wards, and it has been found convenient to group with the admitting service the storage of patients' effects and the discharging service.

The receiving room into which the ambulances discharge is in the center, with the washing room adjacent, where the men's pedigrees are taken and they are undressed, washed and put into hospital clothes, whence they are wheeled to the wards on stretchers. The soiled clothing is transported in bags on wheeled frames to the laundry building for disinfection and washing and returned to the storage room at the right end of the receiving building. The discharged patient returns to this building, where his records have been kept, secures his valuables and clothing, dresses in the small room adjoining the office, turns back his hospital clothes, and leaves the institution.

Fig. 3. Kitchen in Rockefeller Institute Base Hospital.

The surgeon on duty has in this building a small office where he keeps first-aid supplies, in case his intervention is needed to replace a dress-

Fig 4 (No. 2 in general view). Reception pavilion of the Rockefeller Institute Base Hospital. All partitions run to the height of the wall plate. There are concrete floors in the receiving room and washing room and rooms for clean linen and soiled clothes.

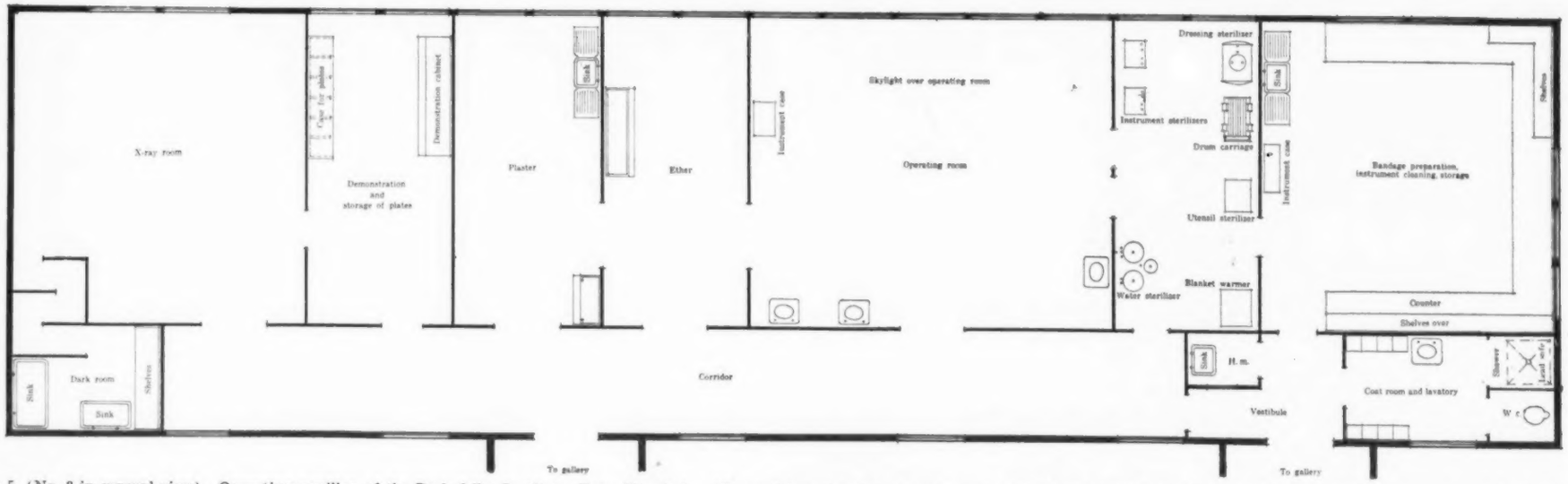

Fig. 5 (No. 3 in general view). Operating pavilion of the Rockefeller Institute Base Hospital. All partitions in this pavilion are doubled and carried to the roof. The shower-bath compartment is lined with galvanized iron and has a lead-lined safe.

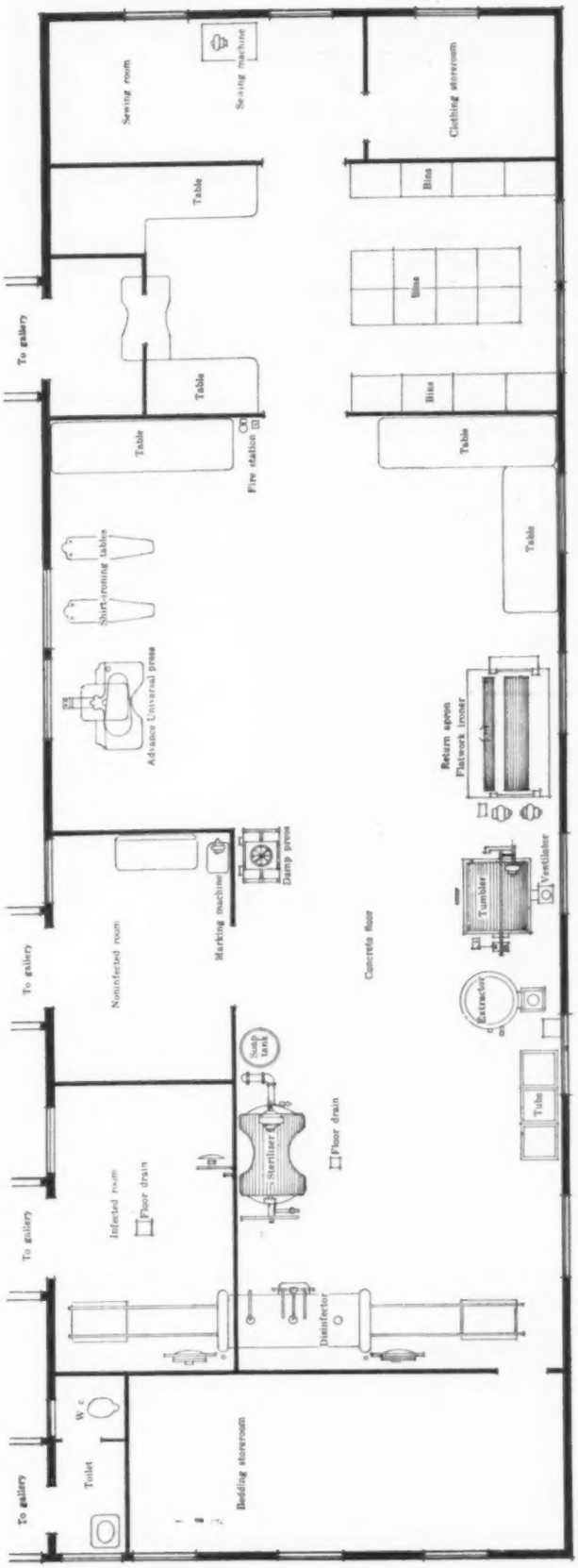

Fig. 6 (No. 11 in general view). Laundry pavilion of Rockefeller Institute Base Hospital. All partitions run to the height of the wall plate.

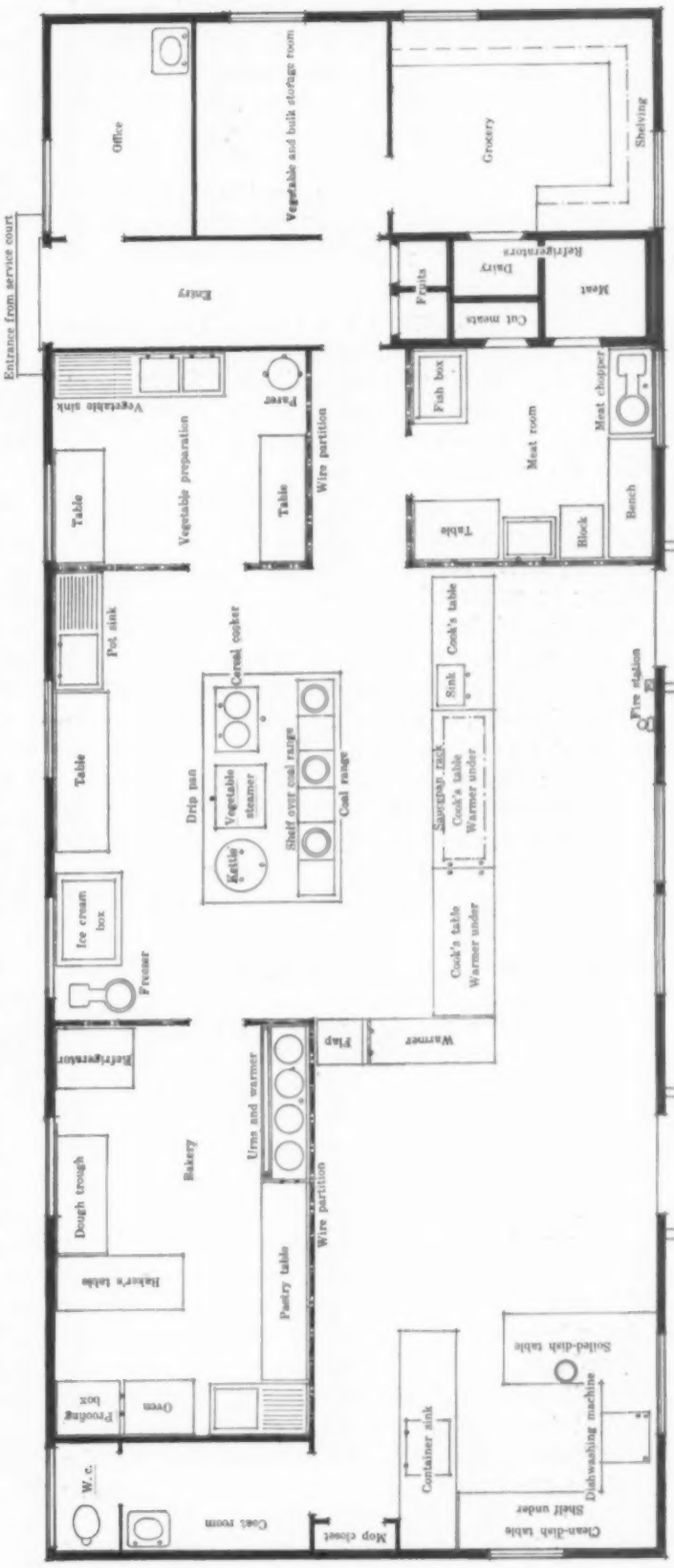

Fig. 7 (No. 10 in general view). Kitchen pavilion of Rockefeller Institute Base Hospital.

ing, etc. He also examines all arriving patients and determines the order in which they are to be bathed and sent into the wards.

The operating pavilion is naturally of especial interest in a war hospital. For this building, 105 feet in length, the wider type of unit, 28 feet wide, with walls 10 feet high, has been adopted. The building lies east and west, so as to secure north light all along one side.

Of the two entrances, one, to the east, is reserved for doctors, nurses, and orderlies, while by the other, patients are brought in. Orderlies coming for their supply of sterile bandages for the wards do not pass beyond the vestibule at the east entrance.

At the east end is a large work room for nurses; next to this is the sterilizing room, easily accessible from the operating room. The scrub-up basins are in the operating room.

The etherizing room, nearly opposite the patients' entrance, gives access both to the operating and the plaster rooms, while the west end of the building is occupied by the x-ray service, with dark room and demonstration and storage room.

The plan of the wards follows very closely that of the surgical hospital of peace times. Oriented north and south, the services are grouped at the north end, so as to allow the free entrance of the winter sun at the south end. This arrangement, while not a necessity in southern climates, is most desirable in a country like France, where every ray of sunlight is precious.

At the south end of the ward is a terrace, cooled in summer by awnings, onto which patients' beds may be wheeled without waiting for them to be convalescent.

Adjoining the ward, on the west side of the corridor, is the nurses' office and linen room, with glazed sash permitting the surveillance of the ward and of the isolation room, to the north of which is the diet kitchen, containing steam table with electric cooker, sink, refrigerator and dresser.

At the east side of the corridor are the bed-pan sink room adjoining the ward, the patients' toilets and lavatories, the sterilizing room, the bath room and the housemaids' sink room, containing soiled clothes bags, brooms, mops, etc.

As all dressings are made in the wards, no surgical dressing room is required.

The bathtub is so placed that a stretcher may be run into the bath room and yet leave space for handling the patient.

On each side of the ward two panels are hinged at the bottom and arranged to swing out in order to permit the rapid evacuation of the building in case of fire.

The small isolation building requires no extended description. The vestibule gives access to the diet kitchen by a window, below which is the combined steam table, sterilizer and electric cooker.

The movable tub is placed on the hallway ready to be wheeled into any room in which it may be needed. A gooseneck for filling this tub and same for emptying, also bed-pan and housemaids' sinks are placed just inside the door leading from the vestibule.

To the north of the wards, on the Avenue A side of the service court, is the recreation building, consisting of a small library and a reading and recreation room for convalescent patients. Adjoining this building, to the east, is the mess hall, a double building, one end being for nurses and the other for orderlies, each having its coat room and pantry.

The kitchen is planned with the entrance for supplies on the service court, the checking office being just inside the door, with vegetable storage adjoining. Directly opposite the door is the refrigerator, with the grocery and milk room on one side and the meat room on the other.

In the center of the kitchen are the steam kettle, vegetable steamer and cereal cooker, placed back to back with the coal range. On one side is the vegetable preparation room and on the other the bakery.

The public portion of the kitchen, reached from the connecting corridor, contains the dishwasher, to which all china is brought back from the wards and mess rooms; after being washed it is stored under the cooks' tables, which form a counter separating the public space from the kitchen proper. The food cars remain in the kitchen between meals, picking up their loads at the pastry table, tea and coffee urns, and cooks' tables.

The laundry building has two receiving rooms, one for infected clothing, linen and bedding, which must pass through either the sterilizing washer or the steam and formaldehyd sterilizer, and the other for ordinary soiled linen. Mattresses and pillows, after sterilization, are stored at the west end of the building, while the linen, after drying and pressing, is stored near the east end on tables and in bins, the mending room and small clothing storage room being placed at the extremity of the building.

The stores building at the northwest corner of the property consists of a large open storeroom, one side of which is furnished with racks for small objects and the other half left free for heavy storage, a small carpenter and paint shop and a small office for the storekeeper.

There remain to be described only the living

quarters. The nurses' building contains a small sitting room with pantry and electric cooker, bedroom and bath for the superintendent, and twelve single and two double bedrooms for nurses. There are also bathtubs, toilets, slop sink, and lavatories and a small linen and store closet.

The maids' building is similar, but with more double and fewer single rooms, while the orderlies' quarters are divided into a large dormitory and a few rooms for sergeants, a sitting room and a room for cleaning equipment, boots, etc.

The method of construction of these buildings is of interest; with the exception of the stores building, which is of ordinary shack construction, all are of portable house unit construction, walls, floors, and roofs being formed of panels. In the early days of the war, such buildings were erected with a single thickness of material for walls, but it very shortly became apparent that the walls must be made double with an air space between the outer and inner sheathing, while the desirability of double roofs and floors was recognized.

A study of the various types of construction led to the adoption of the Humphreys system, a patented English type, which had been employed in the best base hospital in France, that of the British Red Cross and St. John's Guild at Etaples, south of Boulogne (shown on another page, "A Spring Night in a British Hospital in France"). The system has been very considerably modified at the suggestion of Messrs. Marc Eidlitz & Son, the contractors for this work, and Messrs. Sloane & Meller, who have built the panel sections, both concerns having suggested various improvements which make the system fit more closely with our methods of construction.

The two particulars in which the system is markedly superior to others are the steel trusses and the type of windows with lower sash fixed and upper sash hinged at the bottom to swing in, provided in the case of the wards with check pieces to prevent draughts. This arrangement makes the spacing of beds entirely independent of the windows, a feature not to be disdained in a war hospital, where at the moment of an attack the number of beds per ward may be easily increased 25 or 30 percent.

The unit employed in this system is 5 feet in length, either 8 or 10 feet in height, the windows in the 10-foot units having three sashes instead of two. The standard widths of this system are 16, 22, and 28 feet. Thus a building may be erected of either of these widths and in length any multiple of 5 feet, this 5-foot unit being probably the most practical. The panels are small enough to be easily handled, and yet large enough to permit of an ample window or double doors in one panel.

Steam is furnished by the existing power house, the pipes being placed in the roof of the connecting corridors. Laundry and kitchen, operating and sterilizing rooms are similar in equipment to those of any modern hospital. The heating is by pipe coils, which were adopted in preference to radiators, as being less liable to breakage if it became necessary to transport and reerect the hospital. The hot-water supply for the various buildings is furnished by steam coil tanks, so placed that one tank can supply a group of three or four buildings, the length of runs being thereby much reduced.

The plumbing is that of a permanent hospital, but with the suppression of all frills. The electric wiring is exposed throughout, the fixtures, except in wards and operating building, being merely bulbs with painted tin reflectors.

The hospital has also a complete intercommunicating telephone system and a fire alarm system with watchman's clock, while hydrants and fire extinguishers are placed in convenient locations outside and within the building.

If I have spoken thus at length of matters of construction and equipment, it is in order to bring out the fact that base hospitals are today being built and equipped to give the best of surgical care to patients who can be as comfortable as if they were in permanent hospitals.

War is hell, and there is much discomfort which is unavoidable, but in the matter of base and field hospitals immense progress has been made by Great Britain and France, and we owe it to our soldiers to insist that they also shall have the best available, and we know that the best is available if we are willing to pay for it, as we must pay for anything which is worth while.

Our experience of three years of war has shown us that many lives and limbs may be saved if proper hospitals are provided, and how much our losses will be increased if we try to get along with the old inadequate equipment with which we have "muddled through" in the past. Failure to heed the lessons of the war implies criminal inefficiency.

While the Rockefeller War Demonstration Hospital is a base hospital, a modern field hospital, if in buildings, should be in buildings of exactly the same type. The French have found that failing the double-walled building, the double-walled tent is preferable to the single-walled building. Connecting corridors would naturally not be closed, and in most cases would not be covered, but the slat walk connecting all buildings by inclines and without steps should always be present.

For a field hospital the plumbing system must perforce be simplified as must the heating system.

Probably the best method of heating is in the employment of small low-pressure boilers, each arranged to heat a group of three or four buildings. Stoves are objectionable from every point of view, dirty, dangerous and wasteful of coal, and in more and more hospitals are being replaced by steam heat. There should also be a small high-pressure boiler to care for sterilizing and perhaps also for cooking and washing in the case of a large field hospital.

The portable ice machine installed in the Rockefeller Hospital is suitable for a base hospital, while ice for field hospitals would doubtless be distributed from a base rather than manufactured on the spot. The electric installation would of course be the same for the field as for the base hospital, including x-ray equipment.

The erection of the Rockefeller Hospital was begun on June 1, and the buildings are now, July 13, complete and ready for occupancy; that this result was achieved in six weeks is due to the intelligent handling of the work by the general contractors, and the hearty cooperation of each and every trade employed on the work.

In closing, let me refer to the great service rendered to the community by the Rockefeller Institute in placing in concrete form before the medical and architectural professions the base hospital as it exists at its best on the front in France. Many of us have seen the hospitals there, but a description, no matter how detailed and accurate, is of little value in comparison with the completed buildings in which the good qualities and defects stand out for criticism and praise. It is my hope that this group will as a whole meet with the approval of our professions, and that we may in turn reap the benefit of the criticisms which it may call forth.

WHAT THE STATE OF ILLINOIS IS DOING FOR ITS BLIND

Vocational Instruction Given the Blind by the State—Trades and Crafts Followed by the Blind

BY CHARLES E. COMSTOCK, State Superintendent of the Department of Visitation and Instruction of Adult Blind, Chicago.

Illinois is among the foremost of the states of the Union in its work of assisting the blind to help themselves. Besides providing instruction for the sightless children at the State School for the Blind at Jacksonville, at an annual cost of over sixty thousand dollars, maintaining a home where blind men and women have an opportunity of working and earning at least a part of their living, providing pensions for the needy blind, and financing the State Eye and Ear Infirmary, where all is done that is possible to prevent the loss of sight, the state furnishes individual instruction to the adult blind in their homes in such occupations as will tend toward ameliorating their condition and making them self-supporting.

The subjects taught by the Department of Visitation and Instruction of Adult Blind are the reading of Moon type, the reading and writing of full and contracted Braille, typewriting, embossed shorthand, operating the dictating machine, raffia and reed work (basketry), hand and machine sewing, hammock-making, chair-caning, knitting, crocheting, and other domestic arts, rug-weaving, fiber strand chair-making, broom making, and piano-tuning.

Of the five members of the teaching staff, including the managing officer, four are without vision, as it has been found that such teachers more quickly inspire a prospective pupil with his own capabilities.

Many a life has been taken from the depths of despair, in which the one idea is too often that of self-destruction, and lifted into happiness and made to feel that life was still worth the living. Our embossed books and magazines not only afford pleasure to those in darkness, but also lighten the burden of the family.

As an illustration of the benefit the department can furnish to those to whom active business life is impossible, the accomplishment of Mr. William McPherson, of Highland Park, blind and without arms, having learned to read the embossed Moon type with the tip of his tongue, will ever stand as a glowing tribute to the patience of his teacher, Miss Johnson, by whose help his life has been opened into greater fullness.

Several pupils of the department are both deaf and blind. The ability to read embossed type means much to these doubly afflicted ones, while to the aged and those in poor health the reading and the simpler handicrafts bring pleasure and relief from the desperate weariness of unoccupied hours.

To those who have been assisted to earn a partial or entire livelihood, home instruction has indeed proven a boon. Miss Hannah Kaplin, of Peoria, has put her knowledge of chair-caning to good use, as she has the entire business of two of the most prominent stores, and earns a fair living. Among the best trades for blind men are broom-making and piano-tuning. If one could step into the broom shops established by such ambitious men as Messrs. John Gentille of Champaign, W. H. Lakin of Westville, and George Barton of Mason City, for instance, the observer would gain a vivid impression of the capabilities of the blind under the stimulus of suitable instruction and encouragement. Of those learning piano-tuning, a noteworthy instance is the success of Mr. Michael Lawler of Peoria, a young man of about 28 years, who for eight years after losing his sight and before our teacher first called on him, had remained practically in idleness. When he learned to read, his people were kept busy in receiving and returning the embossed books furnished by the Jacksonville and Chicago libraries. When he took up tuning, he sat up nights to practice, and after he mastered the trade, he secured a position with one of the best music houses in his city and is now busy doing custom work. He receives $3 for each piano he tunes, tuning one a day on the average. Recently, when a special sale on pianos was being held, Mr. Lawler tuned thirteen pianos in one week, and was paid $3 for each job.

It is gratifying to see not only the progress that the blind are making themselves, but also the great interest our sighted friends are manifesting, and we are convinced that they are doing their utmost to give the sightless every opportunity to exercise their capabilities. In other words, man's humanity to man makes countless thousands rejoice.

The Cleveland-Cliffs Iron Company, Ishpeming, Mich., is planning the erection of a hospital.

CONVERSION OF YACHTS INTO AMBULANCE BOATS

General Principles to Be Observed in Converting Small Boats Into Hospital Launches—Equipment and Facilities Should Be Comparable With Those of Ordinary Hospital Ambulances—Special Devices for Handling Patients and for Saving Space

By Passed Assistant Surgeon W. E. EATON, Bureau of Medicine and Surgery, U. S. Navy

"HOSPITAL SHIPS," "hospital transports," "ambulance ships," "ambulance boats," are various terms used in description of vessels used for transporting the sick. These vessels are as essential to the general efficiency of any military force, particularly the naval force, as arms and armament. A large number of hospital ships and also ambulance or hospital launches are being employed by the European combatants now at war to transfer from the various fields of conflict to base hospitals or to the home land the victims of the enormous casualties. Many of these ships and small launches have been converted to hospital purposes from a former merchant, passenger, or pleasure craft. When the plans followed for conversion are based upon features derived from a continuously lengthening experience in such alterations of type and structure, the boats result in a fairly satisfactory means of caring for the sick and wounded.

At best, yachts, boats, etc., which are possible of conversion and are converted, result in hospital ships and ambulances of a makeshift character and usually never can be so satisfactory for the purposes intended as those which are built from the keel up upon an acceptable design and with equipment suited to the needs of temporarily housing patients for passage to the base or elsewhere requiring but a few hours to accomplish.

Such yachts, etc., as may be available for conversion will in most instances be not of sufficient size to warrant the installation of the complete equipment necessary for hospital ships, but rather the development of their compartments and conveniences as already installed along plans which require the least change in fittings necessary to render them satisfactory for the temporary residence and voyage of patients from a large hospital ship or the vessels of a fleet to a nearby base hospital or shore.

Much adaptation of the conditions and circumstances as they exist must occur in accordance with the requirements and purposes in view, and this requires great judgment and foresight in

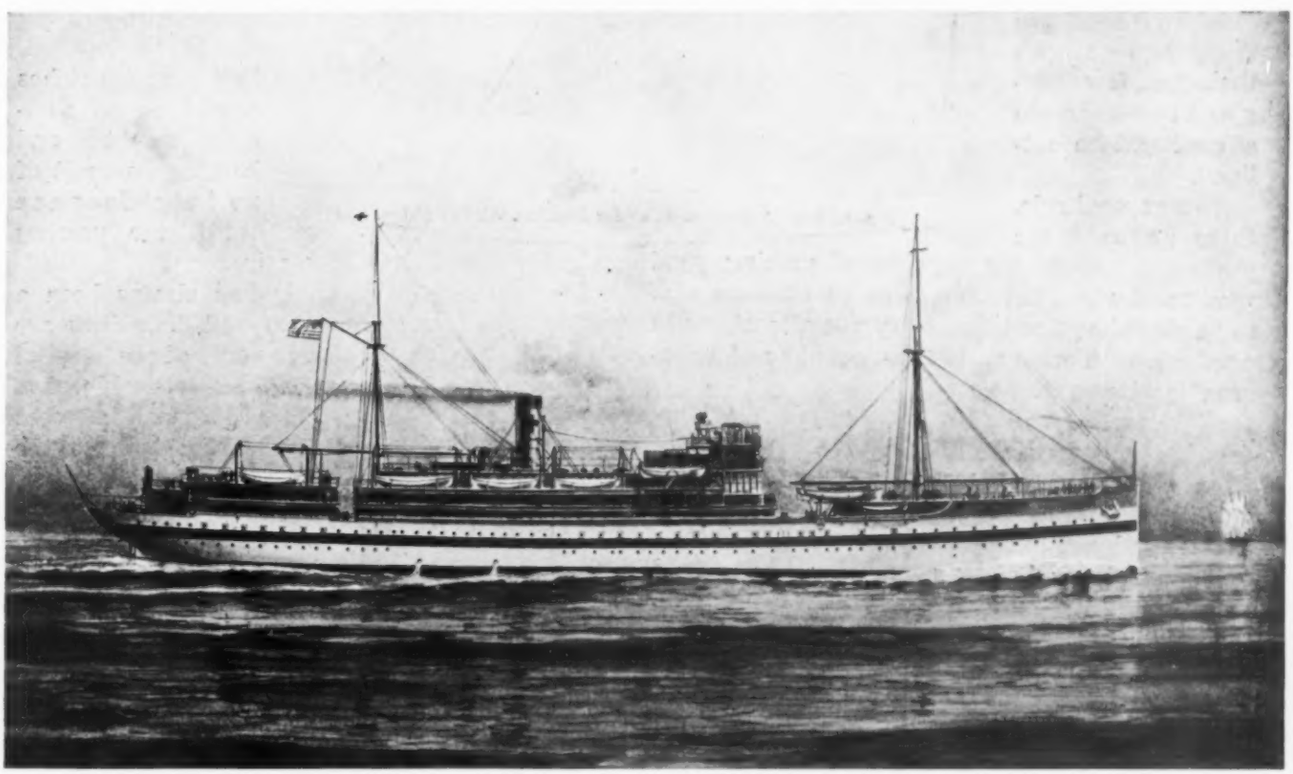

Fig. 1. A hospital ship of the United States navy. This ship presents the general appearance of having been constructed throughout and originally from the keel up as a completely equipped and specially designed hospital ship.

planning alterations and minor details in order that the particular craft under consideration may be appropriate to the service to be rendered.

These ambulance boats must be viewed from much the same angle as are the ambulances of a civil hospital answering accident calls, and their equipment and facilities therefore should conform in a similar manner to what may be reasonably expected for the service to be performed.

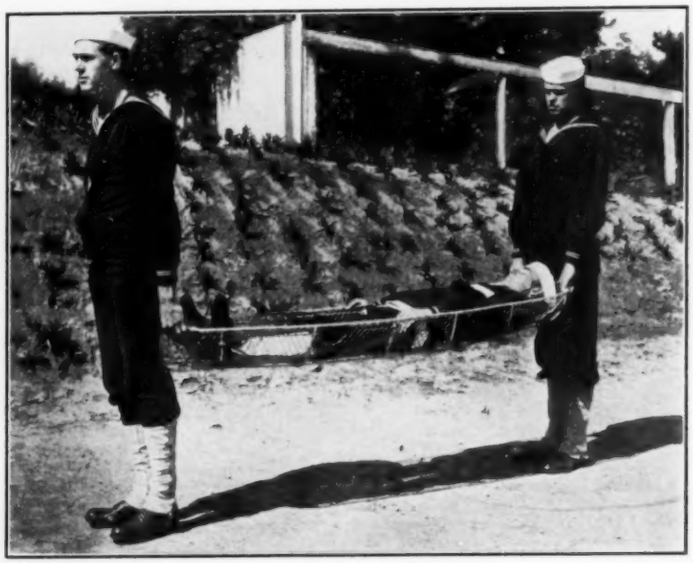

Fig. 2. Stokes' splint stretcher for handling patients at sea.

It is therefore along these lines that the few suggestions herein offered will be outlined.

As a general rule, those vessels are preferable which are capable of making good speed, and which have few cabins, partitions, etc., to be ripped out, or other extensive alterations in conversion. Yachts and boats should be of a reasonable size, not less than 50 feet over all, 10 feet beam, and of about 3 to 4 feet draft, seaworthy, stanch, and well constructed, not liable to an unusual amount of motion, rolling or pitching, nor should they as a rule take water over the bow under ordinary circumstances. A dry ship is essential to adaptability for hospital purposes.

For the large type of fleet hospital ship it would appear that those of from 7,000 to 8,000 tons are best adapted to conversion for purposes of hospital transport. The large-sized yachts are more desirable for this purpose than those of the house-boat or sporting type.

Compartments should be of reasonable size to accommodate, without undue crowding or discomfort, several patients either on stretchers or sitting.

Ease of access both to the boat's gangways and also to the compartments is a prime factor and should be given the greatest consistent consideration in preparing plans on account of the often extreme difficulty of transshipping patients at sea. Unnecessary turns in passageways and stair or ladderway should be avoided. Doors and hatches should be of sufficient width and height to permit of no interference with the passing and handling of stretchers, cots, etc.

The handling of patients has always been a problem, and many features and difficulties are yet unsolved. The motion not only of the hospital ship or battleship, but also of the small launches and transports due to the heave and fall of the sea, requires that the greatest care and expedition be exercised in transshipment in order to avoid injury, submersion or actual loss of the patient. Special hoisting apparatus or methods must be available and are indispensable. Gangways must permit of the greatest facility for the handling of stretcher cases.

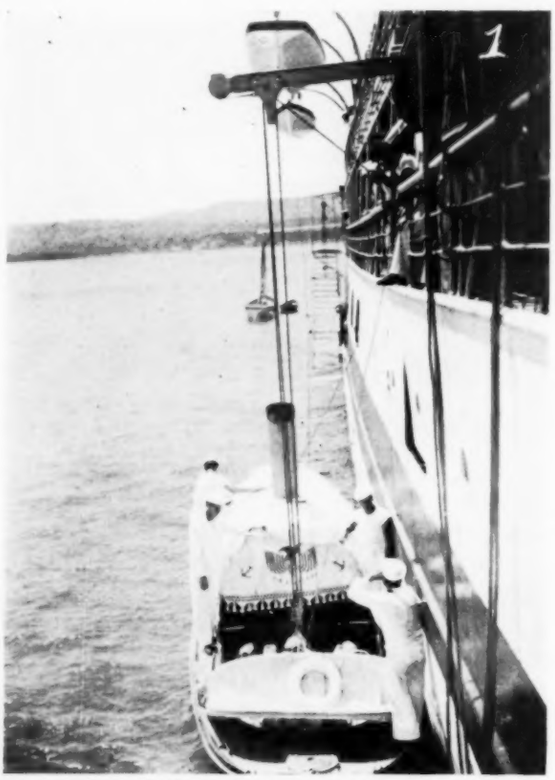

Fig. 3. Use of hoisting apparatus for taking patients on board by means of Stokes' splint stretcher. The patient is securely strapped into the stretcher, to which is attached a sling of special type.

For an ambulance boat, therefore, it will appear that the most necessary facilities are one or more open wards suitably equipped with cots of a permanent or semi-permanent type for the reception of stretcher cases, compartments for

sitting cases, which may not be provided with cots or may be provided with folding cots should it become necessary to use them for any purpose, such as additional bed cases or trips requiring overnight to reach destination.

Ward cots or bunks should be of a type which allows of their being folded against the bulkheads, removed from fastenings, stacked at one side, etc., in order that the compartment may be cleared entirely, ingress and egress made more free, or only such bunks as are required may be used, while the remaining space is available for other purposes. Semi-permanent, swinging or folding bunks may seem more desirable in one compartment or boat, while in another permanent installations may be considered expedient.

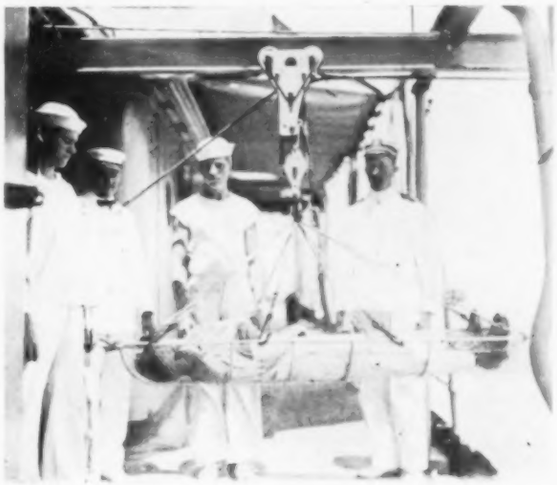

Fig. 4. Patient in stretcher run in on deck.

In most instances, particularly when the craft is small, double-tier arrangements of bunks may be necessary in order to put the compartment to its fullest use, though crowding and insufficiency of air space per man should be avoided.

Metal frames of suitably sized piping supporting a wire spring with sides to hold the mattress from slipping are to be selected not only for strength and cleanliness, but also for service. Such construction makes it possible to install the bunks in either a permanent or a swinging or folding manner, and has all the advantages of open, freely accessible, easily cleaned, sterilized and fumigated fixtures.

There are several types of these bunks now on the market and in use in hospital ships, battleships, hospital cars, barracks, camps, troop trains and troop ships.

In any event, the bunk should be so constructed of the proper material and then so supported as to give the greatest comfort to and prevent undue jolting of the patient when the boat is in motion.

For those compartments set aside for sitting cases or for use as emergency wards, additional cots of the folding army type used in camps, or a cot specially designed for hanging from the overhead deck or bulkheads or sides of the boat may be

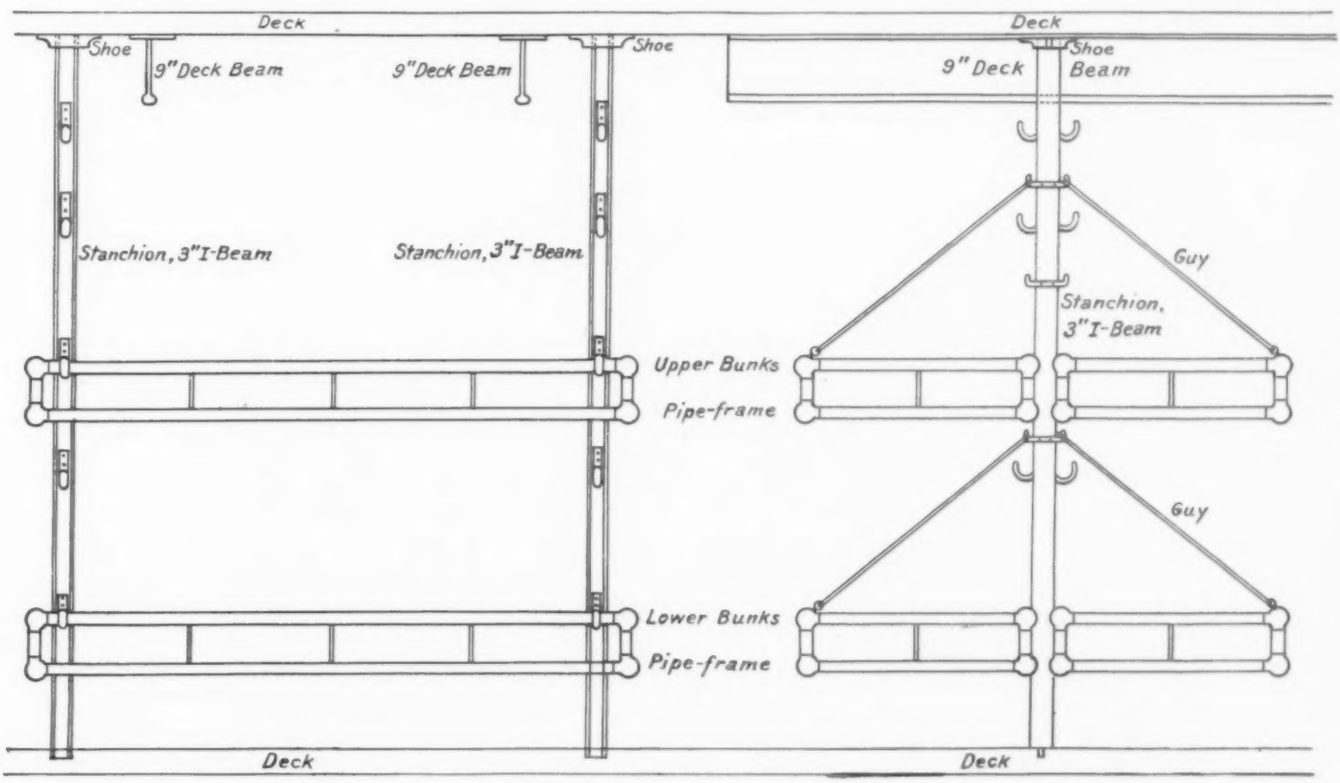

Fig. 5. Design for a type of folding bunk bed for use in a sick bay or hospital ship.

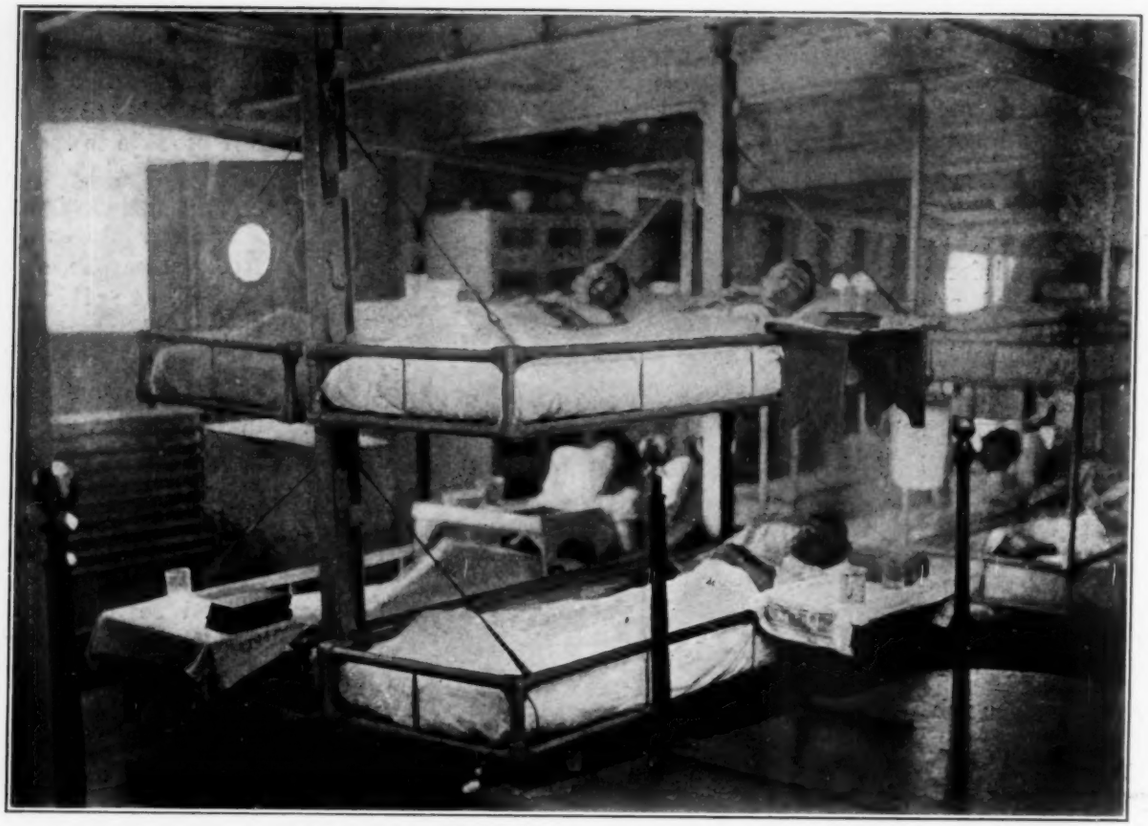

Fig. 6. View of folding beds in use.

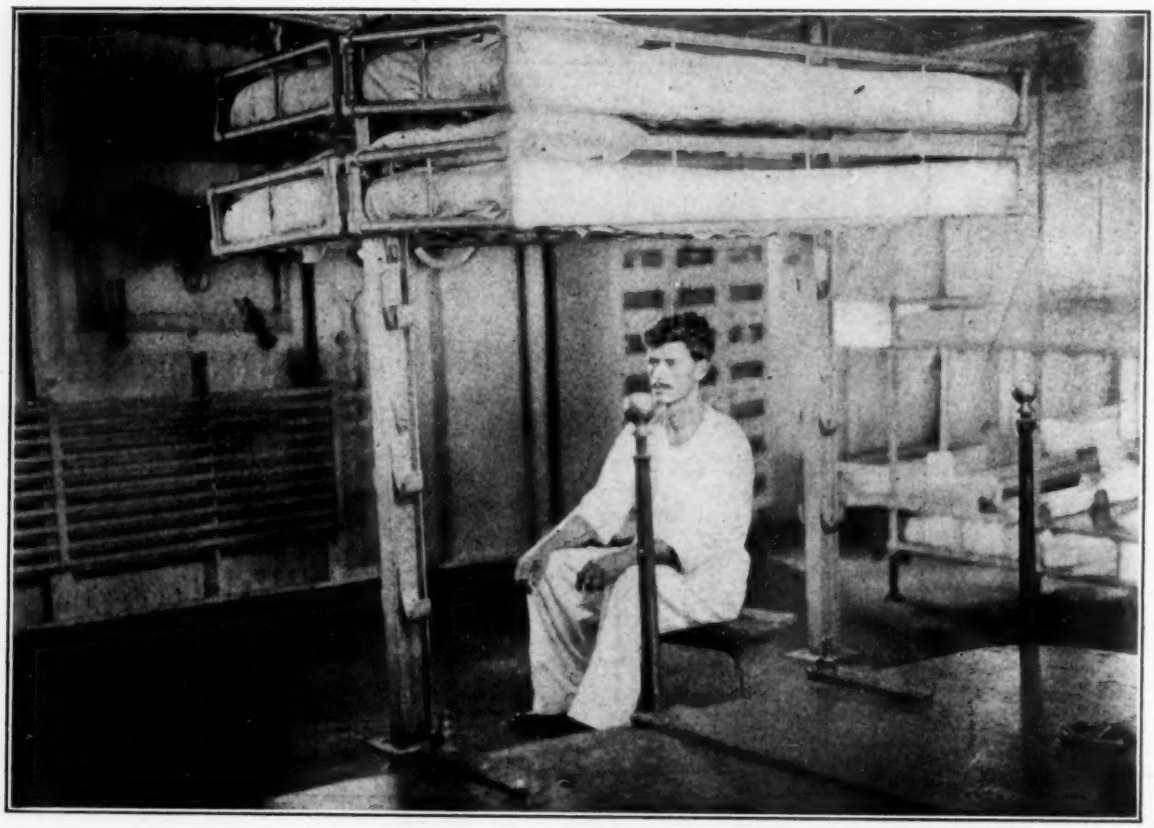

Fig. 7. One method of disposing of unused bunks.

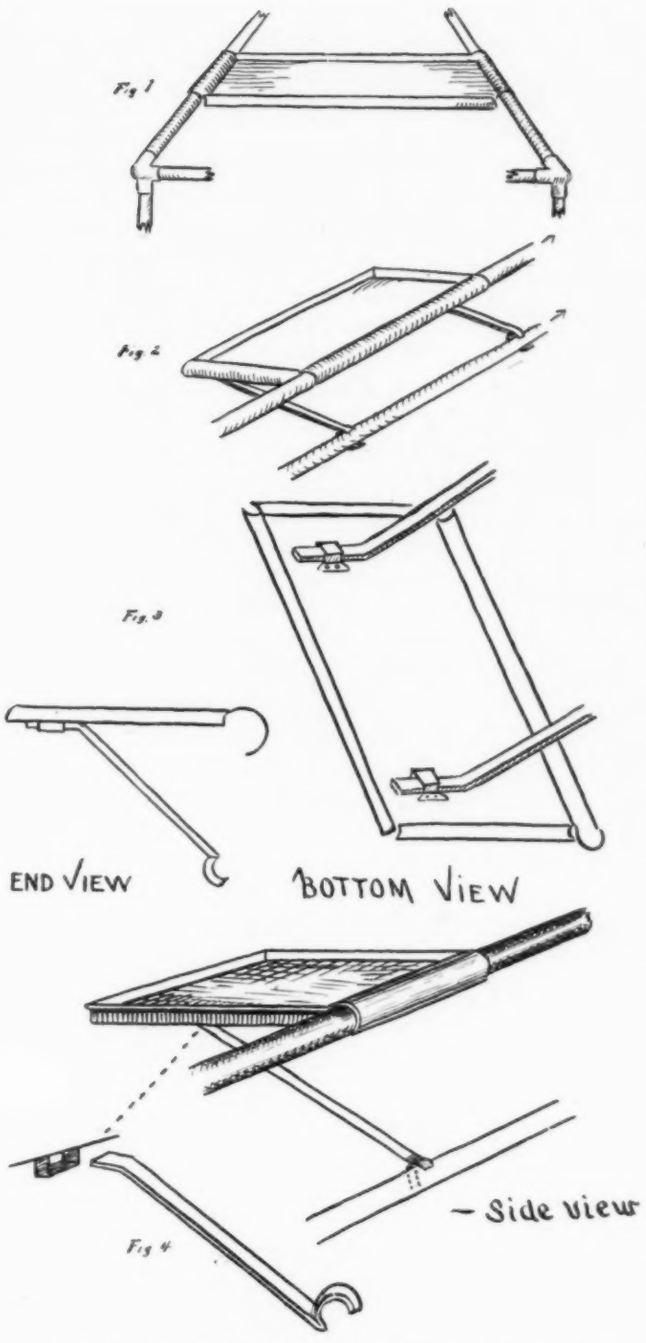

Fig. 8. Design for bunk tray for use at meals, in writing, etc.

stored in an accessible space. These cots may be useful, should an unusual number of bed and stretcher cases be at hand, or as beds for sitting cases if the voyage must be made at or include the night. These provisions will depend much upon the size of the vessel under conversion.

To meet the temporary requirements in caring for patients there should be, adjacent to these wards, bath, toilet, and lavatory fixtures, an emergency dressing and minor operating room with equipment for the sterilization of instruments and dressings for the immediate use of personnel and for the care of those cases requiring further attention than given at the time of injury to safeguard life, linen and dressing closets, a dispensary, medical storeroom, and staterooms for the medical and hospital attendants.

Such special provisions, as for the x-ray, dentist, laboratory, etc., as are found on the larger hospital ships have no place on board the smaller craft, as it is not here that the nicer details will be practiced, but rather the application of primary or secondary first aid.

A general kitchen of sufficient size and with suitable equipment for preparing and supplying food to patients en route should be placed so as to serve its purpose to the best advantage.

The equipment of baths and toilets should be of some standard type designed for sea-going craft, and installation should be most carefully performed in order that the fixtures in service shall be satisfactory. Too great care cannot be given this feature, which becomes most unpleasant and disgusting if improperly constructed.

Kitchen equipment should likewise be of a desirable type suitable for the boat and the amount of work to be undertaken there. In some instances it may be necessary only to provide for keeping warm food and drink which has previously been prepared on shore or aboard a ship where adequate facilities were at hand.

Both in the plumbing and kitchen appliances the judgment and foresight of those preparing the plans must be the determining factor.

The propelling machinery, whatever the kind, must receive its full share of planning and attention. There must be an adequate and satisfactory means of power, since breakdowns of the engines render the boat and its service not only unsatisfactory and undependable, but practically useless, as occasion for frequent repairs results in the boat not being ready for service when most needed. Internal-combustion engines are particularly desirable for small boats, doing away with the provisions for carrying coal, and are usually capable of a longer cruising radius.

Effective ventilation for all compartments must be fully supplied, especially where there is the ever-present possibility that it may become necessary on occasion to fill all available bunks and spaces with sick and now and then crowd in an extra case. It must not be forgotten that all the fresh air it is possible to obtain under the circumstances is absolutely essential for boats, particularly the smaller ones, for, in order to keep out water and keep dry the compartments, ports, doors, hatches, etc., the normal means of allowing the free circulation of air, must all be tightly closed. Even the artificial and auxiliary means of

supplying air may not be adequate for the purpose, or must be interfered with or closed while the boat is breaking through rough water.

It is therefore essential to the best interests of all hands on board that all the compartments for engine rooms, wards, kitchens and crew spaces be possible of constant and complete ventilation and movement of air. Revolving fans run by electricity or otherwise are of greatest value in maintaining a movement of the air in closed spaces, where stagnant air would otherwise exist from lack of outside source of free air.

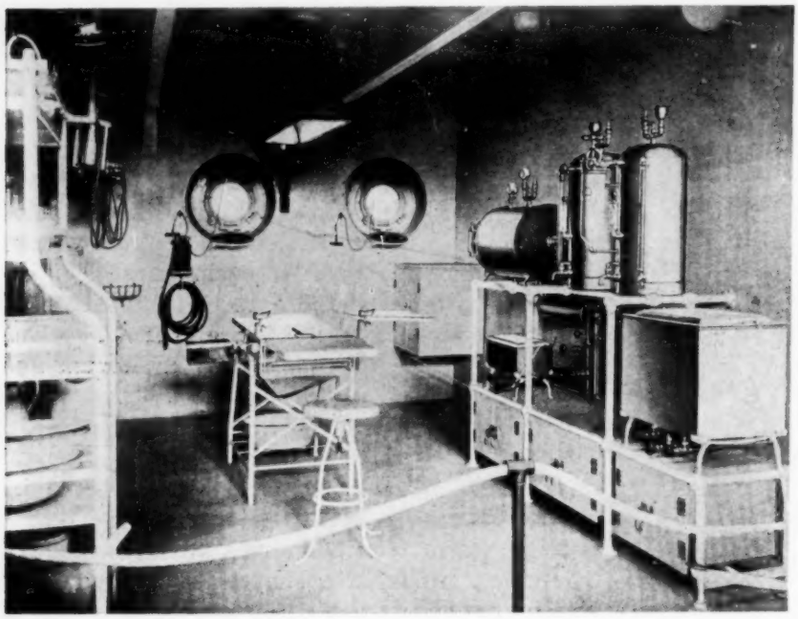

Fig. 9. Operating room of a battleship of the United States navy.

There must be provided an inlet and an outlet, for each compartment housing men, by means of cowls, which may be turned in any direction. If this is not the case, free circulation of air by natural means cannot readily exist, and when hatches and ports are battened down no air can enter except by diffusion from neighboring compartments. For trips under rough weather conditions these cowls are absolutely necessary and several should be of a mushroom type, admitting air but excluding water.

General sanitary features must be given consideration. It must be possible to clean thoroughly all parts of the vessel; there must be no inaccessible corners, pockets, recesses, dark cupboards, or wet places. The bilges must be kept thoroughly drained, clean, and disinfected at all times. Partition walls and general surfaces must be easily cleaned, painted, and smooth. Floors must be kept dry and covered with a suitable protective agent (as linoleum) which is firmly and completely adherent to the deck. Water or other fluids must not gain access to breaks in this surface or be allowed thereby to pass beneath the linoleum, as decomposition soon occurs and a possible source of infectious agents exists and must be dealt with.

A compartment separate from the wards and spaces for the sick needs be set aside for the use of such crew as is required to handle the boat. Here, again, crowding, faulty ventilation, and uncleanly equipment and conditions must be strictly avoided.

As a closing admonition, let it be remembered that to provide for the care of sick and wounded at sea differs widely from their care on shore, and that usually those unaccustomed to such practice cannot realize or design the peculiar facilities necessary, often under the most adverse conditions.

It is therefore suggested that in each instance, before reconstruction or conversion is commenced, the plans and equipment under consideration, or to be followed, be referred for survey, suggestion or revision to a naval medical officer, fully cognizant of the requirements for and uses of hospital and ambulance ships.

Conservation of the Health of Munition Workers

A recent number of the *British Journal of Nursing* contains a description of a hospital for women at the great munition works at Woolwich, where about 30,000 women and girls are employed. Inside the arsenal fourth gate is a hospital of forty beds for women. The entire medical staff consists of women. The work includes much more than the care of patients admitted to the wards. All the women employed in the works are thoroughly examined by a medical officer before being employed, special observation being made of hernia, varicose veins and flat feet. The hospital proper contains a medical and a surgical ward. In the surgical ward are four beds for accident cases. There is a large out-patient department which, however, is inadequate for the demands made on it and is being enlarged. There are, of course, bad accidents. Some of the medical cases are characterized by puffiness of the face, due to the toxic nature of the explosives among which the girls work.

By special arrangement with the Federal Government of Canada, a wing of the Royal Columbian Hospital, New Westminster, B. C., has been set aside for the accommodation of three hundred invalided soldiers. The board of directors of the hospital have just installed new, up-to-date x-ray equipment at a cost of nearly $4,000.

EMERGENCY HOSPITAL CONSTRUCTION FOR THE U. S. NAVY

Buildings Are of One Story, of Wood Construction and Ready-to-Lay Roofing—Observation Ward With Exclusive Entrance—Other Wards Arranged for Isolation When Required—Special Building for Kitchen and Dining Rooms for Well People

By Surgeon-General William C. Braisted, U. S. Navy

SUDDEN demands for naval hospital accommodations for men already enlisted and for men in training has necessitated the development of a type of hospital layout for quick construction and capable of easy expansion. In most cases the hospital will be a self-sustaining group, each group being provided with its own heating plant, laundry, disinfecting machinery, store house, and the various buildings needed to meet the usual requirements for administrative, ward, operating and subsistence purposes. A unit group is designed for 200 beds.

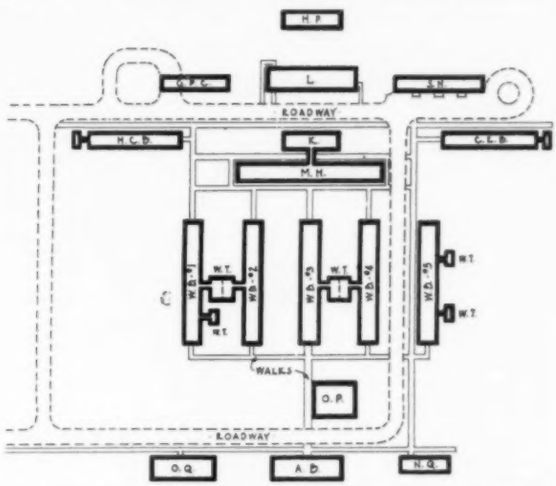

Fig. 1. Typical emergency hospital layout; capacity, 200 patients. The ward plan is shown in Fig. 2.

A. B. Administration building.
O. Q. Officers' quarters.
N. Q. Nurses' quarters.
O. P. Operating pavilion.
W. B. Ward building.
W. T. Ward toilet.
M. H. Mess hall.
K. Kitchen.
H. C. B. Hospital corps' barracks.
C. E. B. Civilian employees' barracks.
L. Laundry.
G. P. C. Garage, paint, and carpenter shop.
S. H. Store house.
H. P. Heating plant.

The buildings are one story, of wood construction, with exterior walls of drop siding, and interior walls, partitions, and ceilings sheathed with ceiling, except in the operating pavilion, which is plastered throughout. The roofs are covered with a ready-to-lay roofing. Steam, furnished from a small heating plant, is used for heating the building and is provided for sterilizing, disinfecting, and cooking apparatus. The lighting is by electricity, simple in layout, using intensive reflectors and frosted lamps. Plumbing is of the best commercial type.

The service of the hospital will bring the patient to the administration building for examination or to the operating pavilion for operation. A covered walk way leads from the administration building to the operating room and thence to the surgical ward so that surgical patients need not be carried through the open. Ward A is separated from the other wards by a drive, making it possible for observation cases to enter that ward without passing through any other building. Ward 5 has separate toilet so that the main ward room may be partitioned for use in cases of contagion or observation. The ward is provided with two toilets, the small one being reserved for the use of special cases or for officers. Each ward cares for 40 patients nominally. A general mess building is provided for patients, hospital corps, doctors, nurses, stewards and pharmacists, and civilian employees, with one kitchen so that the labor of preparing and serving food is reduced to a minimum. Inclined ways from the kitchen to walks provide easy means for transportation of food in food carts. The laundry is placed to the rear of the group of buildings near the heating plant and as far as possible from the wards. All service of the buildings, except for entrance of patients and doctors, is confined to the rear.

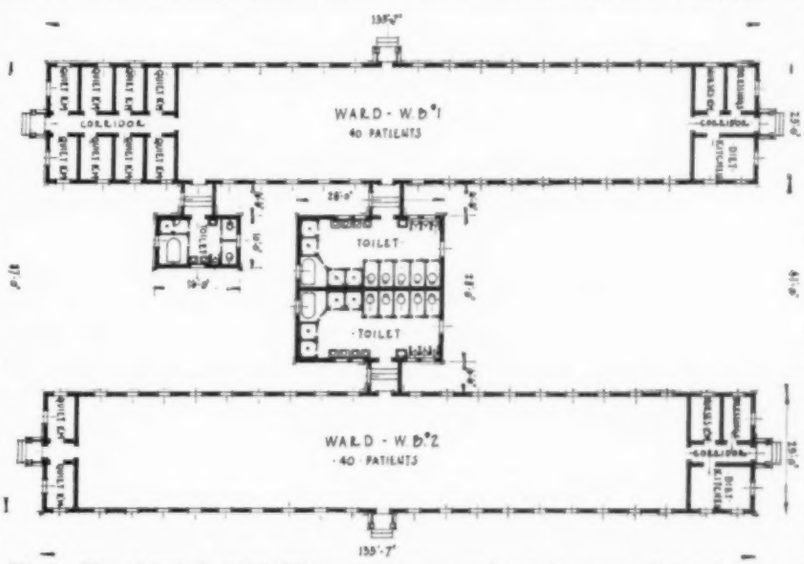

Fig. 2. Plan of typical ward buildings of an emergency hospital, corresponding to buildings marked W. B. 1 and W. B. 2 in layout in Fig. 1. Wards 3 and 4 are like W. B. 2, and W. B. 5 is like W. B. 2, except that it has two toilets.

HOSPITAL ORGANIZATION UNDER THE WAR DEPARTMENT

Rosters of the Three Classes of Hospital Units Organized and Present Status of Each Unit—Units Which Have Been Sent to the Front and Those Ordered to Sail

By JOHN ALLAN HORNSBY, M. D., Major Medical Reserve Corps, U. S. Army

THERE seems to be a good deal of misconception and misunderstanding and want of information as to just what the War Department is doing about medical and hospital services for war purposes. In order that the hospital people may know just what is being done and what has been done, we are attaching the rosters of the three classes of hospital units that have been organized, with the present status of each unit.

It will be noted that only seven base hospital units have been sent to the front and that only three others have been ordered to sail.

Colonel Kean, director of the American Red Cross, is of the opinion that very few more of these base hospital units, if any, will be called for, as he has been informed that it is the wish of the surgeon-general of the army to have medical men apply for commissions in the medical reserve corps as individuals and not as members of groups. Each base hospital unit is composed of approximately 25 doctors, 2 dentists, 50 nurses, 25 volunteer nurses' aids, 150 male administrative enlisted personnel, 15 civil employees and such Red Cross volunteers as the secretary of war may authorize.

All the base hospital units that have gone to Europe are now at work in base hospitals in France, the units being sent there largely to relieve the tired-out and work-worn English and French personnel.

AMERICAN RED CROSS ARMY BASE HOSPITALS AND DIRECTORS

No.	Parent institution	Location	Director	Address
1	Bellevue Hospital	New York City	Dr. Edw. L. Keyes	109 E. 34th st.
2	Presbyterian Hospital*	New York City	Dr. Geo. E. Brewer	16 E. 64th st.
3	Mt. Sinai Hospital	New York City	Dr. N. E. Brill	Mt. Sinai Hospital.
4	Lakeside Hospital*	Cleveland	Dr. Geo. W. Crile	1021 Prospect st.
5	Harvard University*	Boston	Dr. Harvey Cushing	Peter Bent Brigham Hospital.
6	Massachusetts General Hospital†	Boston	Dr. F. A. Washburn	Massachusetts General Hospital.
7	Boston City Hospital	Boston	Dr. J. J. Dowling	Boston City Hospital.
8	New York Post-Graduate Hospital	New York City	Dr. Samuel Lloyd	12 W. 50th st.
9	New York Hospital	New York City	Dr. C. L. Gibson	72 E. 54th st.
10	Pennsylvania Hospital*	Philadelphia	Dr. R. H. Harte	1503 Spruce st.
11	St. Joseph, St. Mary and Augustana Hospitals	Chicago	Dr. A. J. Ochsner	2106 Sedgwick st.
12	Northwestern University Medical School*	Chicago	Dr. F. A. Besley	104 S. Michigan ave.
13	Presbyterian and County Hospital	Chicago	Dr. Dean D. Lewis	122 S. Michigan ave.
14	St. Luke and Michael Reese Hospitals	Chicago	Dr. L. L. McArthur	122 S. Michigan ave.
15	Roosevelt Hospital†	New York City	Dr. Charles H. Peck	30 W. 50th st.
16	German Hospital	New York City	Dr. Fred Kammerer	51 E. 66th st.
17	Harper Hospital†	Detroit	Dr. Angus McLean	David Whitney Building.
18	Johns Hopkins Hospital*	Baltimore	Dr. John M. T. Finney	Johns Hopkins Hospital.
19	Rochester General Hospital	Rochester	Dr. John M. Swan	457 Park ave.
20	University of Pennsylvania	Philadelphia	Dr. John B. Carnett	123 S. 20th st.
21	Washington University Medical School*	St. Louis	Dr. Fred T. Murphy	5738 Cates ave.
22	Milwaukee County Hospital	Milwaukee	Dr. C. A. Evans	809 Wells Building.
23	Buffalo General Hospital	Buffalo	Dr. Marshall Clinton	556 Franklin st.
24	Tulane University	New Orleans	Major Jno. B. Elliott	Maison Blanche Building.
25	Cincinnati General Hospital	Cincinnati	Dr. Wm. Gillespie	670 June st.
26	State University of Minnesota	Minneapolis	Dr. Arthur A. Law	420 Syndicate Building.
27	University of Pittsburgh Medical School	Pittsburgh	Dr. R. T. Miller	Diamond Bank Building.
28	Christian Church Hospital	Kansas City	Dr. J. F. Binnie	Rialto Building.
29	City and County Hospital	Denver		
30	University of California	San Francisco		
31	Youngstown Hospital	Youngstown	Dr. Colin R. Clark	415 Bryson st.
32	City Hospital	Indianapolis	Dr. Edmund D. Clark	1236 North New Jersey st.
33	Albany Hospital and Medical College	Albany	Dr. A. E. Eltin	119 Washington ave.
34	Episcopal Hospital	Philadelphia	Dr. A. P. C. Ashhurst	811 Spruce st.
35	Good Samaritan Hospital	Los Angeles	Dr. J. J. A. Kaathoven	Grand ave. and Seventh st.
36	College of Medicine	Detroit	Dr. Burt R. Shurly	32 W. Adams st.
37	Kings County Hospital	Brooklyn	Dr. Edwin H. Fiske	132 LaFayette st.
38	Jefferson Medical College	Philadelphia	Dr. W. M. L. Coplin	Jefferson Hospital.
39	Massachusetts Homeopathic Hospital	Boston	Dr. Wm. Wesselhoeft	Director.
40	Good Samaritan Hospital	Lexington, Ky.	Dr. David Barroe	Director.
41	University of Virginia	University, Va.	Dr. Wm. Goodwin	Box 453.

*Have sailed.
†Under orders to sail.

RED CROSS HOSPITAL UNITS

There have been organized eighteen so-called Red Cross hospital units, as shown by the roster below. These units have not yet been called into active service and it is not known just exactly when or under what circumstances they will be ordered to duty. These hospital units consist of approximately one-half of the personnel of the base hospitals, 12 doctors, 21 nurses, and such enlisted people, including orderlies, as may be necessary.

AMERICAN RED CROSS HOSPITAL UNITS

	Location	Director	Address
A	Philadelphia, Pa., Presbyterian Hospital	Dr. John H. Jopson	1824 Pine st., Philadelphia.
B	Yonkers, N. Y.	Dr. S. E. Getty	84 Ashburton ave., Yonkers.
C	Spokane, Wash.	Dr. S. E. Lambert	Old National Bank Bldg., Spokane.
D	Louisville, Ky., Louisville City Hospital	(Director not yet named.)	
E	Richmond, Va., Memorial Hospital	Dr. Robert Bryon	Grace Hospital, Richmond.
F	New York City, Harlem Hospital	Dr. Lewis K. Neff	1213 Park ave., New York City.
H	New York City, Fordham Hospital	Dr. Alex. Nicoll	119 W. 88th st., New York City.

	Location	Director	Address
I	Anderson, Ind., St. John's Hospital	Dr. J. B. Fattic	Union Bldg., Anderson.
K	Council Bluffs, Iowa	Dr. Donald McRae	City National Bank Bldg., Council Bluffs.
L	Pittsburgh, Pa., Allegheny General Hospital	Dr. B. W. Caldwell	Allegheny General Hospital, Pittsburgh.
M	Fort Wayne, Ind., Hope Hospital	Dr. Allan F. Hamilton	Ft. Wayne, Ind.
N	New York City, Flower Hospital	Dr. R. S. Copeland	58 Central Park West, New York City, N. Y.
O	Charlotte, N. C.	Dr. Addison G. Brenizer, Jr.	Blandwood Apts., Charlotte, N. C.
P	Memphis, Tenn., Memphis General Hospital	Dr. Battle Malone	Exchange Bldg., Memphis.
Q	Grand Rapids, Mich., Butterworth-Blodgett Unit	Dr. R. R. Smith	Metz Bldg., Grand Rapids, Mich.
R	Fairfield, Iowa	Dr. M. Fred Clarke	Fairfield.
S	Nashville, Tenn., Vanderbilt University	Dr. Richard A. Barr	Eve Bldg., Nashville, Tenn.
V	Syracuse, N. Y., Syracuse General Hospital	Dr. E. S. Van Duyn	Syracuse, N. Y.

AMBULANCE COMPANIES

Forty-two ambulance companies have been organized under the Red Cross, of which the list below is a roster. It will be noted that eight of these companies have been called to active duty and are now in training camps at Allentown, Pa., and Ft. McPherson, Ga.

In addition to these units, there have been organized a number of surgical sections, and it is the intention of the War Department to use these surgical units as flying squadrons or emergency groups wherever they may be needed. These surgical sections are composed of 1 director, 3 surgeons, 1 head nurse, 6 nurses, and a clerk, who is also to be stenographer. Since these rosters were published Colonel Jefferson R. Kean has been relieved as director of the American Red Cross and has been ordered to Europe to take command of the ambulance companies provided for in this plan. Colonel Kean is to have direction of the training and distribution of these ambulance companies, and it is understood that they are to be a part of the equipment of the American army in France.

AMERICAN RED CROSS AMBULANCE COMPANIES

No.	Location	Captain	Address
1	*Pasadena, Cal.	Charles D. Lockwood	Citizens Savings Bank Building.
2	University of California, Berkeley, Cal.	Alvin Powell	Thayer Building, Oakland, Cal.
3	University of Chicago, Chicago, Ill.	Elbert Clark	Dept. of Anatomy, University of Chicago.
4	Cleveland, Ohio	Harold O. Ruh	2500 E. 35th st., Cleveland.
5	*Washington, D. C.	Ryan Devereux	Chevy Chase, Md.
6	*Fordham University, Fordham, N. Y.	Joseph Donnelly	2790 Marion ave., Fordham, N. Y.
7	University of New York, New York City	Chester F. S. Whitney	697 West End ave., New York City.
8	Detroit, Mich.	Charles Barton	Kresge Medical Building, Detroit, Mich.
9	Northwestern University, Chicago, Ill.	Stephen V. Balderston	800 Davis st., Evanston, Ill.
10	*Columbia University, New York City	William H. Rockwell	156 E. 74th st., New York City.
11	Battle Creek, Mich.	James T. Case	Battle Creek Sanitarium.
12	*University of Washington, Seattle, Wash.	David C. Hall	4531 18th st., N. E., Seattle, Wash.
13	Pittsfield, Mass.	Robert J. Carpenter	188 Pleasant st., North Adams, Mass.
14	University of Oregon, Eugene, Ore.	John E. Kuykendall	Eugene, Ore.
15	Grand Rapids, Mich.	Thomas D. Gordon	Metz Building, Grand Rapids, Mich.
16	Fredonia, Kan.	Edgar C. Duncan	Fredonia, Kan.
17	*Boston, Mass.	(No captain)	
18	Indianapolis, Ind.	Mason B. Light	6152 College ave.
19	Portland, Ore.	Ernest H. Streit	Medical Building.
20	Atlanta, Ga.	Leo P. Daly	Chandler Building.
21	Flint, Mich.	Walter H. Winchester	801 East 9th st.
22	Charleston, W. Va.	Timothy L. Barber	915 Crescent Road.
23	Portland, Maine	Ernest B. Folsom	77 Granite st.
24	Kansas City, Mo.	Ernest W. Cavaness	Lathrop Building.
25	Rutland, Vt.	William Stickney	37 North Main St.
26	*Columbia, S. C.	Marion H. Wyman	Care Columbia Hospital.
27	Salt Lake City, Utah	Hugh B. Sprague	32 Buckingham Apts.
28	Detroit, Mich.	Griffith A. Thomas	661 Agnes ave., Detroit, Mich.
29	†Atlanta, Ga.	Walpole C. Brewer	Atlanta National Bank Building.
30	Denver, Colo.	Thomas M. Hopkins	314 Detroit st.
31	Greensboro, N. C.	Charles S. Lawrence	Masonic Temple, Winston-Salem.
32	Greenville, S. C.	James E. Daniel	Findlay Building.
33	Summit, N. J.	William H. Lawrence, Jr.	29 Bushwood Road.
34	Hudson County, N. J.	Frederick J. Quigley	543 Fulton st., Weehawken P. O.
35	Buffalo, N. Y.	(No officers appointed)	
36	Houston, Texas	Claude C. Cody	406 Gulf Building.
37	Minneapolis, Minn.	Ralph T. Knight	623 Syndicate Building.
38	San Antonio, Texas	Homer T. Wilson	Moore Building.
39	Vicksburg, Miss.	E. F. Howard	Vicksburg, Miss.
40	Fort Worth, Texas	H. B. Kingsbury	2815 Hemphill st., Fort Worth, Texas.
41	Lock Haven, Pa.	Geo. D. Green	Lock Haven, Pa.
42	Michigan	F. A. Roberts	Flint, Mich.

*Gone into training camp at Allentown, Pa. †Gone into training camp at Fort McPherson, Ga.

Equipping a Diet Kitchen

It is impossible to consider an institutional kitchen and its equipment separately, writes Ruth McNary Smith in the *Journal of Home Economics*. Every article must be purchased not only for a definite purpose, but for a definite place as well. In the case of a hospital, the equipment purchased will depend largely upon whether there is one central diet kitchen, or a smaller kitchen on each floor, to which the food it sent, and there placed upon trays. The size of the institution must also be considered.

Some of the general items necessary to equip a small hospital of 25 beds are as follows: (1) steam table, having a capacity of two meat pans and six food receptacles of heavy pottery, metal, or enamel (iron pots are not economy); (2) stove, a good gas range having six burners, two large ovens, a cake oven with glass door, and a broiler; (3) refrigerator—a central plant with pipes leading to diet kitchen is ideal, but, if not available, then purchase the best refrigerator, as it is economy, and have it lined with opaque glass; (4) sterilizer—an ordinary dish-washer is not suitable for the diet kitchen (a cylindrical receptacle, 3 feet deep and 2½ feet in diameter, having steam coils in the bottom, will give good results; the advantage of this type is its simplicity; (5) tray-rack—for sanitary reasons this should be constructed of iron pipe, enameled white, having shelves made of movable wooden rods; (6) tray-lift—this should be lined with asbestos with metal cover and heated with hot water, electricity, or soapstones.

SCARCITY OF SURGICAL INSTRUMENTS AND HOSPITAL EQUIPMENT

The Situation Among Manufacturers—Emerging From a Hard-Time Period, Producers Are Making Excellent Progress for Satisfactory Output—Japanese Instruments Inferior—Medical Men Urged to "Make Something Else Do"

By VINCENZ MUELLER, Chicago, Editor of the Technical Department of The Modern Hospital

DURING the last few months the editor of THE MODERN HOSPITAL has received many inquiries from subscribers concerning the true state of affairs existing in the surgical instrument and hospital equipment business, and in consequence thereof he has asked me to make a thorough investigation of the situation and present the findings, as far as possible, to our readers in these columns.

In this article I have confined myself to the surgical instrument, office and hospital equipment situation, omitting from consideration rubber goods, drug sundries, etc., for the reason that most of these items have always been of domestic manufacture and because these articles have not been affected to the same extent by the labor and material situation as those goods which are made of steel and brass, etc.

Most of the hospital managers who had been in the field some years before the European war commenced, are probably familiar with the fact that only about 30 percent of the surgical instruments made of steel were then manufactured in this country, the remainder, approximately 70 percent, being imported from abroad, about 60 percent from Germany and the remaining 10 percent from England, France and elsewhere. The reason for this state of affairs was not the fact that our dealers preferred to handle foreign-made goods in preference to the American product, but that these goods were manufactured abroad at a much lower cost of labor and material, so that our American manufacturers simply could not compete successfully with the foreign product. An additional factor, one that should not be overlooked by hospital men, was that the encouragement in the shape of a protective tariff had to a great extent been taken away from them the year before the outbreak of the war, and this reduction in the tariff made the production of steel surgical instruments unprofitable and many of the skilled men theretofore employed in the trade had to look for employment in other lines. It thus happened that when the importation from Europe was cut off and we were thrown on our own resources, the production of steel surgical instruments in this country was at the lowest ebb at which it had been for many years.

To the credit of the American surgical instrument dealers, both wholesale and retail, it must be said that they did not immediately take advantage of the situation and raise the prices on the stocks which were still on hand, but did this only after many months, when they realized that the war would be a long one and that they would not be able to replace the goods which they sold, no matter what price they might be willing to pay.

From that time on, imported goods still procurable naturally commanded a higher price, and the prices advanced in ratio with the diminishing supply. It was only natural that the American manufacturer of steel surgical instruments, who, as previously stated, had just gone through a most disheartening experience in the way of losing the reasonable protection that his industry had been accorded, was at first rather loath to again make an effort to build up the trade, not knowing how soon the war would be over, at which time he would again be at the mercy of foreign competition. As soon as the situation became more acute, however, the older manufacturers in this country, as well as a number of new ones, again took up the production of steel instruments in quantities. In order to do this, however, many new machines and dies had to be secured, and as the demand for skilled labor for making dies and machinery, as well as competent help to finish the surgical instruments, was out of proportion to the supply, it is only natural that the finished product had to be marketed at a considerably higher price than the imported goods, or even the goods that had been previously manufactured in this country.

The accusation, therefore, which one so often hears from surgeons and hospital men, that they are being greatly overcharged in their purchases of surgical instruments and equipment, is grossly unjust, and if we will only compare the increase in cost of other necessities used in a hospital, the production of which in many instances does not even require the help of highly skilled labor, we will find that the increase in the cost of instruments and equipment is far below that of other items.

One of the great difficulties manufacturers of instruments have had and still have to contend with is that as soon as they have some new men

broken in (at their own expense) to do fairly good work, along come labor agents from the more profitable trades and make to these men tempting offers in the way of pay which the manufacturers of instruments cannot meet, and then they have to go all over the same ground again with the next man they may be able to secure. Yet regardless of all these difficulties, the American manufacturers have been able to speed up production to such an extent that with the help of some imports from Japan the dealers in surgical instruments have been able during the last few months to give their customers fairly prompt service.

Something should be said about the surgical instruments which are now imported from Japan. Some of these are of a rather poor quality. The Japanese instrument manufacturer or broker (with whom one has to deal mostly) is a very obliging gentleman. He will furnish instruments to you at any price whatsoever that you are willing to pay. If you tell him that you want 10 gross of a certain forceps, but that you do not want to pay more than $9 a dozen for them he will say, "Very well, sir, we make them for $9 a dozen," and if you tell him that you want the same type of instruments, but that they must be of first-class quality, and that you are willing to pay as much as $18 a dozen for them, he will also agree to make them at that price.

The demands for surgical instruments upon Japan are tremendous at this time. After catering to the home market, the Japanese completely supply the needs of Russia, China, Italy, as well as furnishing many items for England, France and other countries now at war with the Central Powers, the manufacturers of which had, before the war, supplied surgical instruments to all these countries, to the extent of from 50 to 80 percent of their entire requirements.

This simply means that especially at the present time, with this abnormal demand, first-class goods command a good price, even in Japan, and, when instruments are offered at a very cheap price, one should be on his guard as to what one is going to get for his money. The fact is, the prices on instruments from Japan have gone up repeatedly during the last year, so that today, after duty, charges, war insurance, etc., are added, first-class surgical instruments made in Japan cannot be sold much cheaper, if any, than a similar grade of instruments made in this country.

Surgical needles are more scarce at the present time than anything else that is used in hospital work. This especially refers to the more popular types, such as Mayo's, Ferguson's, Murphy's intestinal, etc., and in these it is the medium sizes that cannot be had. Some of the smaller and larger sizes are still obtainable, of course, at advanced prices. Many dealers have an extensive stock of surgical needles of various types which would probably do the work as well as the special patterns which each individual surgeon seems to feel he must have, and consequently insists that nothing else will do. It would greatly improve the situation all around if surgeons would adapt themselves a little more to existing conditions and try to use the next best needle obtainable, instead of promptly returning substitutes (often with sarcastic comment) which have been procured by his dealer and sent to him with the best of intentions.

Surgeons' needles have always been imported from England and Germany. The German supply, as is well known, has been cut off for over two years and only very small quantities can occasionally be secured from England.

An American firm has lately started to manufacture surgical needles, but it will be a very long time before they will be able to fill the demand.

Owing to the entrance of our country into the war, the demand for surgical requirements has become greater than ever. The army and navy medical supply departments have recently placed contracts with our manufacturers for sufficient instruments, x-ray, operating room and general hospital equipment to take care of an army of approximately a million men and this equipment must be delivered within a specified time. As practically all of our manufacturers were informed some weeks beforehand what would be expected of them, they have made extensive preparations in anticipation and there is no doubt but that the equipment will be delivered within the time limit. As the government only requires certain types of instruments and equipment, we are firmly convinced that, owing to the great effort the manufacturers are making to increase their output and with the help of the imports from the Orient, they will be able to furnish, in addition to the requirements of the army and navy, enough goods to carry the surgical profession and the hospitals over the next few critical months.

I have taken this matter up with the principal manufacturers of hospital furniture and x-ray equipment, and practically all of them state that if only the hospital people will help them by confining their wants to the standard patterns for the time being and not insist on specially designed apparatus and also anticipate their wants for the larger equipment from 60 to 90 days ahead.

they feel sure that they will be able to take care of everybody's needs.

I am extremely sorry, however, that I cannot hold out any hope as regards lower prices in the near future on either instruments or equipment. It is a well-known fact that skilled labor is more in demand than ever, especially in all of the metal-working trades, and the scarcity will be even more felt after many of these men have been called to the colors. Material of every kind is scarce and commands formerly unheard-of prices, consequently all of the information that I have been able to secure points to the fact that we may expect another decided increase in prices, especially in those products in which material forms a great part of the original cost.

AN ARTIST'S WORK IN WAR ORTHOPEDICS

Miss Grace Gassette and Her Remarkable Work in Restoring to Wounded Soldiers the Use of Their Limbs—American Woman Called Into Consultation by Foremost Surgeons of Paris

By FANNY B. LESTER, Chicago

THE French Government has shown its appreciation of the great service rendered by Miss Grace Gassette, of Chicago, to the suffering and crippled soldiers of France by conferring upon her *la Croix de Chevalier de la Legion d'Honneur*, the medal which Napoleon I established. This is the highest honor ever bestowed for military or civil service. Miss Gassette is an artist of ability. She has resided in Paris for twenty years. Undoubtedly her thorough knowledge of anatomy acquired in her art work laid the foundation for this creative work that she is now doing in the line of corrective surgical appliances. At the beginning of the war, she and other American women in Paris gave their services in the surgical dressing room of the American Ambulance at Neuilly, France. For twenty-six months she superintended this department.

Photograph by Matzene, Chicago.

Fig. 1. Miss Grace Gassette, the American artist who has recently received the cross of the Legion of Honor because of her work in the creation of mechanical appliances for the correction of the afflictions of wounded soldiers. Miss Gassette and Mrs. Edith Wharton (who also has been prominent in the work of war relief in France) are the first two American women to receive the decoration of the Legion of Honor since the beginning of the war.

In the surgical work of the ambulance it was soon discovered that the ordinary orthopedic appliances would not serve for the extraordinary fractures of battle, and then it was that Miss Gassette began to invent simple devices to aid the surgeons. These devices held the limbs in position so that the wounds could be drained and amputation avoided. The appliances were so successful that other surgeons and other hospitals wanted them. The demand became so insistent that a special committee to carry on this work was organized, called "The Franco-American Corrective Surgical Appliance Committee," and Miss Gassette resigned from the ambulance and became "directrice technique" of the new work. Skilled workmen could not be secured, so locksmiths and carpenters were pressed into the service and trained. A young sculptor was found to do the modeling. The shop and clinic opened September, 1916, in the studios of two artists. Three men, a boy and two sewing women, were the paid workers. All of the other help is voluntary, including the use of three automobiles, an auto-truck, and their drivers. "The government is now furnishing the gasoline to run them, which helps wonderfully, as it is hard to get and is so high."

The money to finance the work has been given by the committee, by interested friends in the United States, not a few of whom are Chicagoans. From October 20 to November 28, 550 appliances of sixty different kinds were distributed to hospitals and individuals.

Twenty-six hospitals have been served, and the list is growing. Within a month the ministry of war (French) has ordered 1,000 splints. One surgeon said, "With Dr. Carrel's solution and Miss Gassett's splints we can save many limbs that would otherwise be amputated." The surgeons are introducing them as fast as they can be produced. Two additional rooms for the shop have had to be secured, in the same street (17 rue Boissonade).

Fig. 2. Miss Gassette (on the right) at the door of Mrs. Depew's hospital, then (September, 1916) three miles from the German lines. On the left is Miss Edwards of Pittsburgh, who has given generously to the work of Miss Gassette's committee. In the center is the commandant communal.

A daily clinic cares for men who have been discharged from the hospital but need special help. Miss Gassette writes:

"The best testimonials come from the men who are helped. It would do your heart good could you see their happy faces, when they find their helpless arms and legs restored. One poor fellow with two broken vertebræ had been helpless for months, most of the time in a plaster cast so heavy that he could not walk. For him I made an aluminum corset well padded inside. The first day he wore it he walked about normally, as happy as a child. Another man was wounded in the neck in such a way as to draw his head down toward his shoulder, where it was held by the tightened cords at an angle of about 20 degrees. A simple invention was put on which he has worn for several weeks; the deflection is now only about 85 degrees. This result was secured by a gradual pushing, the appliance regulated by a system of screws. His neck will soon be straight. The treatment he had had was a pulling process, very painful and unsuccessful. So many of these devices are restoring crippled hands, generally the right hand. Here the need is appalling.

"One of the U. S. navy officers came to the shop and has repeated his visit several times. He says all of these cases should be written up, for they will be of practical interest to the surgical world."

The following letter, written without thought of publication by Miss Gassette to one of the friends in Chicago who have been exceedingly helpful in sustaining her work by supplying the means to carry it on, gives a most interesting picture of her methods and their results:

"PARIS, March 31, 1917.

"*My dear Mrs.* ——:

"Your very good letter came today, and I thank you for all your kind thoughts so beautifully expressed. It is fine to have friends, and we all need them in these terrible times. We are entering upon our thirty-second month of war and America is still sending us money to help. I have turned over your check to my committee, for that is the work nearest my heart, the work which gives results each day. The money that you have sent me will supply seven men who have to have the most complicated kind of appliances, which I make out of just the best material that I can buy so as to last them just as long as possible. I show them how they are made and how they can be repaired at the lowest cost possible. Did the instrument-makers make this kind of appliance, they would cost anywhere from $50 to $60 apiece, so you see we are not at all extravagant.

"I did not realize that I was doing anything extraordinary until doctor after doctor told me, and the French doctors begged me to help them. At first I gave half of my time to this new work and half of my time to the American Ambulance. I decided to give all of my time to the French formations since November 6, when I left the American Ambulance. I have had a broader scope and have done things that I never could have done had I not been working with the biggest men in France. How I do what I do I do not know, but I just do it, and the doctors give me their cases with a free hand, and so far the results have been beyond the expectations of everyone. What I have done almost sounds like miracles. I never get used to it myself, as an American surgeon who is here for our government told me today after he had passed his morning in my clinic, 'You will pass the rest of your life as an orthopedic consultant.' Everyone tells me that my methods are entirely new.

"I cannot tell you what I will do, but I can tell you what I have done and tell you about my men. I love them and they are fine, everyone of them. I guess that it is because I love them that I find a way to help them. My heart is full tonight, for I have made six men happy today. I

will tell you about these. I started my work at 9:30, as usual, and found three men waiting for me. I expected a quiet day, for I had two complicated fittings, and I always do the fittings myself. Well, I took the first one; he came to me two weeks ago—heard of me from a friend. He was a poor fellow, honorably discharged eight months ago, as a confirmed cripple. A ball had entered his back and came out of his thigh, cutting his sciatic nerve. He was on two crutches and his foot turned at almost a right angle at the ankle. The whole posterior aera of his foot and leg below the knee was so sensitive that he could not bear the light weight of his fingers. I examined him carefully, and decided that the case was not so hopeless as his

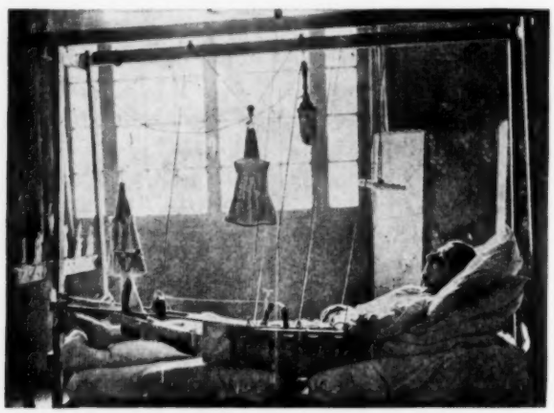

Fig. 3. Gassette hammock suspension, applied for compound fracture of femur, upper third.

papers indicated. I bound cotton about his foot until I could touch it without pain and then tried very gently to straighten it. When I had it almost straight, he said it felt better than it had in a year, so I bent an iron and incorporated it in plaster bandages, putting the leg into as good position as I could; I was so afraid that I might produce a pressure sore that I told him to return in three days, which he did. When he came he said, 'Mademoiselle, I moved my big toe this morning for the first time.' I had left his toes out of the plaster expressly to see if there was any sensation of motion. When he told me this then I knew that my first impression was correct; that there was a little life in the nerve. I took off the plaster, expecting to arrange it so as to buckle it on again. I found that I really had put the plaster on in sufficient extension so as to relieve the pressure on the nerve at the knee. All the sensitiveness in the foot had disappeared. I could handle it easily without pain, so I then strapped the foot as straight as I could with adhesive plaster. I made him a brace which I use for the sciatic cases, which are the worst, and today I put it on him and he walked without crutches, and, best of all, he could bend his instep slightly. Tears came into his eyes, and he said, 'Mademoiselle, every doctor has told me that I would have to walk on crutches the rest of my life.' His papers showed that his case had continually been marked hopeless. I gave him a cane, for I was afraid that he might overdo, and he left me with his crutches swung over his shoulder. The last thing he said to me was, 'Mademoiselle, it is a miracle, I cannot believe it is I.' He is going home for a visit to his sister and then will return to a school, where he is learning a new trade.

"Isn't that worth getting tired and everything else? I think it is. The next case was another man from the same school. He, too, had a sciatic paralysis, but not so bad a case. He came on one cane and left with his cane over his shoulder, he, too, walking straight. My next case was that of a man with a part of the humerus gone close to the elbow joint. He is a patient of Professor Walthers. I gave him his first appliance to break the ankylosis in the elbow January 22. Today I put on a final appliance. He had good functioning of his forearm, and Dr. Walther said to make a bone graft would not be successful, and if Dr. Walther says so, I guess it is so. Well, my appliance gives my man every motion of the arm. He, too, is happy, and Dr. Walther is going to present the case to the Paris Surgical Society upon Wednesday of next week. I have over fifty of Walther's cases under treatment.

"My next case was a captain belonging to one of the best families in France. He heard of me, and came. He had a dislocated shoulder and a fracture which was treated at the front for a simple dislocation, so that a big callous formed and he could not move his arm at all, and to add to his troubles, he had neuritis. I have had him six weeks and he can get his hand to his face, and can shave and feed himself. I will get him fixed in time. His doctors are now sending me other cases. After him came a case of Professor Babinsky's, one that I asked for one day when I was at the clinic in consultation. Isn't it funny for me

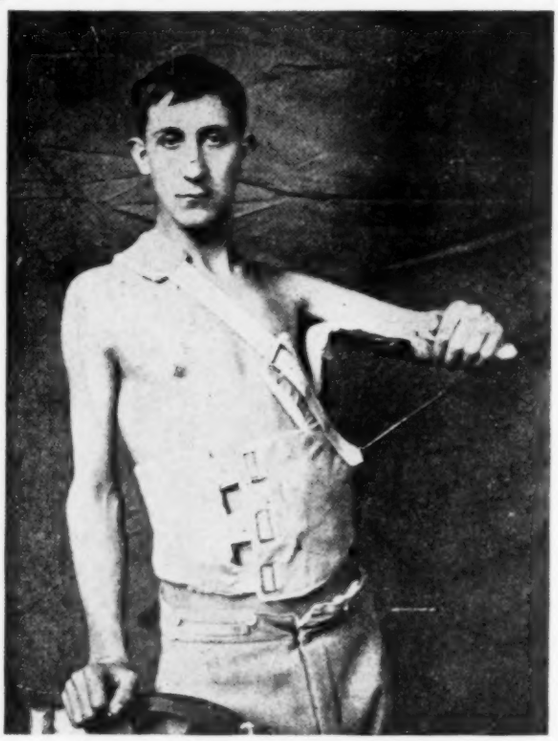

Fig. 4. Wing support for ununited fracture of humerus (Gassette apparatus).

to be called in consultation with professors, men whose opinions decide things? I think it is. I had gone to see a scoliosis, which I have not started on yet. I am waiting for two x-rays to be taken in different positions. The smile of the man interested me and I asked the doctor what his case was. He said that the patient had a paralysis of the brachial plexus, but the important thing up to date had been to save his eyesight; that an abscess had formed in the head, back of the ear, and they had had to trepan him; that he was getting better, and that they would take up the brachial plexus next, as you know Babinsky's clinic is nerves. I examined the man and I asked the doctor to let me work upon him, and see if I could do something for

him, so he said yes. Poor fellow, he was in a pitiful condition; had had no use of any of the muscles of his arm for five months. Well, that was a week ago. I made a support for his arm so as to relieve the weight of it from his neck. Then he came to me for treatment. That was day before yesterday. Today when he came he said very timidly, 'Look, mademoiselle, I can move two fingers.' I said, 'Did you tell Dr. Dubois?' He is Babinsky's first assistant and a stanch friend of my methods. He said 'yes.' I asked him what Dubois said and he said Dr. Bubois smiled and said, 'You stick to Mlle. Gassette.'

Fig. 5. Gassette hammock suspension, used for compound fracture of femur.

"My next case was one of Professor Quénu's. He had a resected shoulder, with loss of bone 2½ inches. Well, in two months I have increased his muscles to double their force, and he can raise his arm and has all freedom of motion.

"Then there were two other men; one, who had a total radial paralysis, could not bend his fingers. He can now carry a pail with 10 liters (about 10 quarts) in it, and is getting on better and better. When the curator of the museum where he works saw his appliance he asked him where he got it and he told him. He came to see me and he is a doctor, and the next day his surgeon came to see me and they asked me to go to their hospital. I examined five men and can help them all. I could go on all night and tell you of my men, but this will give you an idea of how your money is going to be spent. Captain Raoul Duval said today, 'You will have an army of grateful men after this war.'

"I have good friends and I will enclose a copy of a letter which I received from Justin Godart, assistant secretary of state for the army medical service, after his official visit. Both Mme. Poincaré and Mme. Waldeck Rousseau have been good friends to me. I think that I have had more privileges than any other American woman over here, but then I never ask to do anything unless it is to help. I have no curiosity about trenches, etc. I have not written of what I have done and seen at the front, for I want to help, and I might do a lot of harm by talking; but after the war I think that I can write some very interesting experiences.

"Last November the *Military Surgeon* in Washington published an article of mine, and now, commencing about June, they will have something every month. They have asked me to give them anything that I can.

"My work is what is called laboratory or research work. I have hopes that some of the medical schools at home will give me a little fund to help this branch of it. It will be too bad if some school does not have my matter, for Val-de-Grace Military Hospital here has asked through the ministry for complete copies of my records. I keep full medical records, photographs, x-rays and drawings. M. Godart said that they were the most complete records that he had seen.

"Our money has all come from America and mostly from my friends, and I am pleased, especially so as nearly every bit of it is from Chicago.

"You will notice upon the enclosed circular that I have a representative from the government; we are the only organization that has. My workmen are all mobilized soldiers. Our materials we have to get from the government, as they have the control of all metals, etc., so we get it at cost price.

"Besides the clinical work, we make and supply free all kinds of appliances, which I have worked out for hospital use. Since we started in the fall we have supplied fifty hospitals, two in Roumania run by the French, and yesterday they came for a big hospital in Saloniki. We have not advertised our wares, fearing that we might run short of funds. We get our best advertising from one doctor to another, and from one man to another. So many doctors say to me, 'Why do you not let it be generally known what you are doing?' Sometimes I worry for fear our money will give out, for we spend $2,000 a month as it is, but then we have given out over 6,000 pieces of appliance, and have about 5,000 on hand ready for the offensive, which has commenced, but which so far has not caused many wounded on our side, so that the rear hospitals are empty. In any event, we are doing our best. GRACE GASSETTE."

Such help as this not only gives relief to the suffering men, but it brings new hope into their lives when they find they can take their places again in the ranks of usefulness. Many of these appliances only cost from 5 to 30 francs each. The good that this committee can do is limited only by the means to carry it on.

Minnesota Sanatorium Association Meeting

The second semi-annual meeting of the Minnesota Sanatorium Association, held July 10 at the St. Paul Hotel, like the meeting six months ago, was largely attended.

To meet a request from the War Department for twelve tuberculosis experts to assist the regular army officers at Fort Snelling, Fort Chickamauga, and Fort Riley, a committee consisting of the following was designated: Drs. A. T. Laird, George W. Beach, and I. J. Murphy.

The meeting was attended by twenty-four physicians from state sanatorium boards, also all attending physicians of the various county sanatoria, members of the advisory commission and several public health nurses.

Addresses were given by the following physicians: George W. Beach, State Sanatorium, Walker; F. S. Bissell, University Hospital; Robinson Bosworth, secretary of the Advisory Commission; and L. E. Sutton, attending physician at Mineral Springs and Buena Vista Sanatoria.

You can usually locate the best apple tree in the orchard by the clubs under it.—James G. Blaine.

GRAPE JUICE, LIME JUICE, AND LOGANBERRY JUICE

Fruits and Their Juices Valuable for Sweetness and Flavor Rather Than for Nutrition—Nutrients Chiefly Sugar—Importance of Mineral Constituents—Question of Preservatives

By JOHN PHILLIPS STREET, Chemist Connecticut Agricultural Experiment Station, New Haven, Conn.

In general we consume fruits and their juices more for their sweetness and flavor than for the nutriment they supply. The only nutrients of importance in fruits are the carbohydrates, about three-fourths of these as a rule being sugar in some form. Levulose (fruit sugar) is the characteristic sugar present, but certain fruits, such as apples, apricots, and pineapples, sometimes also contain considerable amounts of cane sugar. The total sugars present in fruits range from about 1.5 percent in lemons to 16 or 17 percent in grapes. The non-sugar carbohydrates are chiefly gums, most of which are of the nature of pectins. While these pectins in certain cases may be partially converted into pentose sugars during the ripening process, the nutritive value of the pentoses is probably small. It is the pectin, however, that gives to certain fruits their jellying power, a property taken advantage of by the maker of jellies and preserves. Certain fruits contain appreciable amounts of cellulose, whortleberries, figs, and raspberries showing the highest percentages among the more common fruits.

The mineral constituents of fruits are of importance, and by some authorities are deemed of almost as much value as the actual nutriment of the fruit. Potash is the most abundant mineral element present and is generally combined with an organic acid, such as tartaric acid in grapes, malic acid in apples, and citric acid in lemons and limes. The combustion processes of the body convert these acids into carbonates, thus assisting in making the blood more alkaline and the urine less acid. In certain diseases, such as scurvy, these fruit acids are of decided therapeutic value. During the ripening process the amount of organic acid in the fruit dimishes, and this fact, together with the formation of an increased amount of sugar, accounts for the greater sweetness of the more mature fruit.

The odor and flavor of fruits are due to various ethereal compounds, the fruit ethers, which are present in various combinations and generally in quite small amounts. Although devoid of nutriment value, these natural flavors doubtless act as appetite stimulants and to some extent assist digestion.

GRAPE JUICE

As already stated, the grape is relatively high in its sugar content. This fact gives the grape considerable nutritive value, and the organic acids it contains, chiefly tartaric, act as a mild laxative and diuretic, at the same time reducing urine acidity. While doubtless the therapeutic effects of grape juice are considerably exaggerated, it is nevertheless obvious that its constituents are by no means to be ignored from either a dietetic or a therapeutic standpoint. Furthermore, in these days of constantly increasing prohibition tendencies, the use of unfermented grape juice as a refreshing beverage is becoming more and more general. Consequently we find numerous commercial brands of grape juice of varying quality on the market.

TABLE I.—ANALYSES OF COMMERCIAL GRAPE JUICES

	Solids	Tartaric acid		Solids	Tartaric acid
A. and P.*	14.80	0.71	National	32.73	1.03
Armour's*	17.14	1.05	Noyes' Ontario	15.77	1.02
Armour's Top Notch	14.51	0.93	Paw Paw*	16.14	0.74
Bass Island	16.79	1.15	Randall's Carbo-Grapo*	14.50	0.28
Duffy's*	17.02	1.05	Randall's Gold Medal*	26.22	1.03
Duffy's	15.37	1.07	Randall's Gold Medal	15.37	0.94
Fenner's*	16.63	0.79	Red Wing	17.50	1.01
Fremont	13.99	1.08	Ritter's*	23.11	0.84
Gely's	16.59	1.37	Royal Purple	15.02	1.00
Gleason's*	16.31	0.91	Schuhle's*	13.21	0.82
Howland's*	17.53	0.98	Schuhle's	16.62	0.93
Imperial (Hager's)	17.84	0.94	Shirriff's	17.44	0.83
Imperial (St. David's)	11.03	0.51	Sterling	31.83	0.82
Lake Erie*	18.94	1.01	Vineland*	20.49	0.96
La Société Anonyme	18.55	0.50	Vineland	17.68	0.85
Liggett's	15.13	0.86	Walker's*	15.92	1.13
McLaughlin's	19.58	1.44	Walker's	14.84	1.20
Mellen's*	17.31	1.17	Welch's*	14.93	1.27
Naboth*	20.85	1.17	Welch's	16.13	1.15

*Analyzed by writer; other analyses by Canada Inland Revenue Department.

Table I gives partial analyses of a number of these juices examined either in my laboratory or in that of the Canada Inland Revenue Department.

For practical purposes the solids may be considered as being almost entirely sugar, in genuine grape juices, the sugar being mainly levulose, or invert sugar. Even in juices fortified with cane sugar but little of this sugar will be found as such in the juice, the organic acids present being sufficient to convert most of it into invert sugar.

Owing to the variability in the composition of the different varieties of grapes, due to varietal, climatic, and seasonal conditions, it is somewhat difficult to establish a standard for the commercial juice. However, the Canadian standard appears reasonable and is of quite general application. This standard states that the acidity of grape

juice, calculated as tartaric acid, should range between 1.0 and 1.5 percent, and that if the solids much exceed 15 percent sugar has probably been added. It is obvious, therefore, that certain brands listed in the table contain added sugars, and in a few cases, at least, the tartaric acid percentage is far too low for a genuine grape juice.

Aside from the addition of sugar to give body to an otherwise weak juice, probably the most common form of adulteration is the addition of water. A low solid content and acidity value would generally indicate this form of adulteration. In the past, salicylic acid was frequently found in grape juice as a preservative, and in rare cases coal-tar dyes were used. These forms of adulteration, however, at the present time have chiefly a historic interest.

LIME JUICE

Lime juice, the freshly expressed juice of the fruit of various species of the genus *Citrus*, is a very different product from grape juice. The genuine juice contains very little sugar of any kind, and the characteristic acid is citric instead of tartaric. In fact, nearly all of the solids of this juice exist as free citric acid.

In nine genuine samples of the juice McGill found the solids to range from 8.4 to 9.7 percent, average, 9.0 percent, and the citric acid from 7.4 to 8.8 percent, average, 8.0 percent. Similarly Lythgoe found an average of 8.7 percent solids and 7.2 percent citric acid in eight genuine juices. Accordingly the Canadian authorities adopted a standard requiring a minimum of 8 percent solids and 7 percent free citric acid.

TABLE II.—ANALYSES OF COMMERCIAL LIME JUICES

	Solids	Citric acid	Preservative
Blackwood's	8.8	7.6	Salicylic acid
Dalton's	7.2	7.1	.....
Dominica	10.6	8.1	Benzoic acid
Eaton's	8.7	6.9	Salicylic acid
Great Auk's Head	8.3	7.6	Salicylic acid
Hedley's*	8.3	7.9	Sulphurous acid
Howard's	6.7	6.6	.....
Kovah	7.1	6.8	Salicylic acid
Maple Leaf	...	7.5	Salicylic acid
Montserrat	9.2	8.0	.....
Nabob	8.3	7.6	None, or sulphurous acid
Olympia	7.8	7.3	Benzoic acid, none
Rose's	8.6	7.9	Benzoic acid, none, or sulphurous acid
Rose's*	8.0	7.6	Sulphurous acid
Rowat's Thistle	11.0	8.2	Salicylic acid
Rowat's Thistle*	8.3	7.7	None
Royal	...	6.9	.....
Royal Crest	9.3	8.4	.....
Sovereign	8.0	7.2	Salicylic acid, benzoic acid, none, or sulphurous acid
Sterling	7.3	6.8	Benzoic acid, salicylic acid, or none
Stone's	8.2	7.3	.....
Stone's*	8.5	7.4	Sulphurous acid
Stower's	7.8	7.0	Salicylic acid, or none
Victor*	7.8	7.4	Benzoic acid
Victoria Cross	9.3	7.7	Sulphurous acid
White Star	7.9	6.9	Salicylic acid
Yacht Club	8.0	7.3	.....

*Analyzed by writer; others analyzed by Canada Inland Revenue Department.

Table II gives the analyses of a number of commercial brands made by McGill and myself. While the table contains a few brands of doubtful genuineness, whose relatively low solids suggest the addition of water, these analyses may be considered as typical of standard lime juices.

Lime juice has been, and to some extent still is, grossly adulterated. The commonest adulterant is water, while artificial color, tartaric acid, glucose and other sugars have been found in many brands. McGill has found a product sold as lime juice which was simply an aqueous solution of tartaric acid colored with a coal-tar dye. I have found one brand containing only 2.8 percent of solids, the label frankly stating that the product was two-thirds water and one-third lime juice. Another brand I found to be lime juice and water in equal proportions. It is apparent, therefore, that a careful scrutiny of the label is necessary when purchasing this product.

The question of preservatives in lime juice is a rather difficult one. These are quite commonly used, and it has frequently been claimed that their use is necessary. The fact, however, that certain well-known and very popular brands are put up without any preservative raises some doubt as to the accuracy of the claim for its necessity. A study of analyses of the same brands of lime juice during a period of several years shows considerable variability in the kind of preservative used. Originally salicylic acid was the most popular, later shifting to benzoic acid or sodium benzoate, while at the present time sulphurous acid is the most widely used. The column in the table marked "Preservative" shows this variability in certain brands in the order of the usage.

LOGANBERRY JUICE, "PHEZ"

This product, only recently introduced in the market, is now being extensively advertised, and it is of interest to point out its composition. The product is also worthy of special attention, as it is an excellent example of the development of an entirely new food simply by American patience and ingenuity. In 1881, J. H. Logan, of Santa Cruz, Cal., succeeded in crossing the native wild blackberry and the raspberry, the resultant fruit being a large berry shaped like the mammoth blackberry, but colored a deeper red than the raspberry, and possessing a very distinctive tang and flavor. Phez is one of the results of this successful breeding experiment, and is the trade-mark of the Pheasant brand of loganberry juice, produced in the state of Oregon. It consists of the pure juice of the loganberry fortified with sufficient cane sugar to render it sweet enough as a beverage for the average palate. Its color is

natural and it contains no chemical preservative or alcohol.

I am familiar with but two analyses of this product, one made by the Columbus Laboratories of Chicago and one by himself, the former being somewhat the more complete. These are given in Table III.

TABLE III.—ANALYSES OF PHEZ

	Columbus Laboratories	Connecticut
Specific gravity at 15.6° C.	1.1525	1.1516
Solids	34.25	34.13
Reducing sugars, as invert	16.10	17.87
Cane sugar	14.80	13.48
Citric acid	1.32	*
Malic acid	0.47	*
Pectose, color, etc.	1.07	*
Protein	0.20	*
Ash	0.29	*
Preservatives	....	none
Color	natural	natural
Alcohol	none	none

*Not determined.

One pint of the juice contains 126 grains of fruit acids, chiefly citric, and the equivalent of 6 ounces of cane sugar. It would seem that Phez is a valuable addition to the list of our healthful, nutritious and palatable non-alcoholic beverages.

Addendum to Paper on Flavoring Extracts in July Number

Since preparing the paper on "Flavoring Extracts," published in the July number of THE MODERN HOSPITAL, I have examined a series of extracts put out by the Calumet Tea and Coffee Company, of Chicago, under the name Ariston. I am informed that these extracts are widely used by hospitals, and therefore my analyses may be of interest to MODERN HOSPITAL readers. The analyses indicate that these extracts are preparations of high quality.

Vanilla. Alcohol by volume, 39.75; vanillin, 0.20; coumarin, none; color, natural.

Ginger. Alcohol by volume, 89.50; solids, 0.99; solids soluble in 95 percent alcohol, 0.93; solids soluble in water, 0.09.

Lemon. Alcohol by volume, 83.17; lemon oil, 5.40; color, natural.

Orange. Alcohol by volume, 87.45; orange oil, 4.96; color natural.

Clove. Alcohol by volume, 89.56; clove oil, 2.95; color, natural.

Wintergreen. Alcohol by volume, 88.87; oil, 2.94; color, natural.

Peppermint. Alcohol by volume, 91.05; peppermint oil, 3.2; color, natural.

Almond. Alcohol by volume, 92.52; almond oil, 1.16; color, natural.

Celery. Alcohol by volume, 92.55; oil of celery seed, 0.62; color, natural.

THE SANATORIUM BLANKET PROBLEM

Importance of the Blanket Question in a Tuberculosis Sanatorium—Allowance of Blankets for Each Patient—Standard Size and Weight—Method of Making Up the Bed—Grading of Used Blankets—Proper Method of Cleaning and Disinfecting

BY H. L. ROCKWOOD, M. D., WARRENSVILLE, OHIO, MEDICAL DIRECTOR OF THE WARRENSVILLE TUBERCULOSIS SANATORIUM OF THE CITY OF CLEVELAND

THE blanket equipment of a tuberculosis sanatorium requires more careful attention than might at first thought seem necessary. If one will consider the usual requirements of the routine treatment of tuberculosis as conducted in the constantly increasing number of tuberculosis sanatoriums, it will at once be appreciated that blankets form an almost indispensable part of the sanatorium bed outfit. No single component of the average sanatorium bed requires more financial outlay, and no greater sin against economical and sanitary operation of such institutions can be committed than to neglect to handle the supply of blankets properly.

The routine therapeutic procedures in tuberculosis demand that patients be kept in the outdoor air a maximum amount of time night and day the year around. When the sanatorium beds are located in rooms, the windows are wide open, and when, as is more commonly the case, the beds are located on verandas or porches, there is no protection from weather except the roof and possibly wind or rain shields, save that furnished by the bed coverings. From the patients' point of view, physical discomfort under such conditions can be avoided only by an abundant supply of serviceable blankets. It might further be said that therapeutic gains will be slight if patients are allowed to suffer from cold or exposure when "taking the cure" at sanatoriums.

There is, of course, a great variation in the specific blanket requirements at differently located institutions. Climatic conditions may reduce or increase the number required per patient. At the Cleveland municipal sanatorium located at Warrensville, Ohio, a long, cold winter season is the rule, and in addition we are subject to rather severe cold winds from Lake Erie. Our beds are of the usual metal tubing type, white enameled, 3 feet wide, 6½ feet long, with springs of woven wire resting 36 inches from the floor. We use a rather thick cotton felt mattress. The blanket we have found most serviceable for such conditions is woolen, dark gray color, 66 inches wide and 78 inches long, and known to the trade as a 5-pound blanket. As a matter of fact, the weight of a single blanket is usually 4½ pounds when new. Whether or not this weight is rapidly reduced by wear depends largely on how the blanket is handled.

We have found the so-called "single" blankets better than "double" ones. Nurses say that when

blankets are used so large as to require folding several times beds are much less easily made and kept fit for inspection than when "single" blankets are used. Furthermore, for the various physical conditions of patients encountered in an institution of 250 beds we find a "single" blanket better adapted, provided such blanket is of the width we are using. To make this clear, it should be stated that most patients habitually lie on that side of the body which they find more comfortable. On account of the condition of the lungs, it is frequently impossible for them to lie on either side with equal freedom from cough or breathing disturbances. This fact, as well as the frequent need of removing blankets when soiled by hemorrhage, sputum, or other excreta, makes it very undesirable to use blankets which on account of their size have one or more folds beneath the patient and the other folds over him.

It is the custom at Warrensville to allow five of the blankets we have described for the use of each patient, and it is usual to find that after a patient has been given instructions as to the most efficient way to arrange his blankets on reclining, this number is ample for all weather conditions. There are exceptions, to be sure, both in weather and in patients, but the greater number of our patients go through the winter without discomfort with this number of blankets at their disposal. It is a simple matter to discard one or more on warmer days or nights by folding the unused blankets neatly and placing them in the spaces between the ends of the bed and the mattress.

Just a word may be said in regard to the proper way to make up the bed. One blanket at least should be beneath the patient; whether on the mattress or with a sheet between it and the mattress depends on the personal wishes of the patient. For sanitary reasons we prefer to have patients lie between sheets with the blankets outside, but we allow patients to lie directly between the blankets if they prefer. The edges of all blankets are not allowed to hang over the sides of the bed. It is better to turn them back on top of the mattress at the foot of the bed as well as on the sides. In this way the blankets make a kind of pouch in which the patient inserts himself, keeping out on all sides the entrance of cold air. In this way, with the aid of a foot-warmer and one of the various kinds of head caps which protect the head and neck, almost any kind of cold weather can be endured with no discomfort.

When the blankets are all new there is, of course, no choice, all being the same, but after some become worn by use and further supplies of new blankets are added, it becomes necessary to grade them all, and when the blankets are given out to patients each patient should receive an equal number of each grade. We have systematized this by having three grades. The average length of life for the blanket we use is not more than three years when kept constantly in service, and for practical purposes we designate as No. 1 blankets those in their first season or new. No. 2 blankets are those which have already been used one season, and the No. 3 blankets represent all others in use. After the cold season each year all blankets are inspected, as will be described later, and at this time the stock of No. 3 blankets is reduced to those only which are serviceable for another season, all the others of this grade going into the discard to be used for cleaning purposes or for various other purposes, such as cutting into strips for wrapping the foot-warmers with which each patient is provided.

For identification purposes it is customary to number all blankets used. There is a patent brass tag in the market used by laundries chiefly for marking such articles as overalls or anything which cannot be easily marked with ink. This tag is well adapted to marking blankets by number. The tags may be purchased numbered in rotation, or blank tags may be secured and the number put on with a set of steel numbering dies. The number tag is placed in the corner of the blanket and serves several purposes. When blankets are given out for use, the number on the tag is noted in the blanket record book, and each patient is charged thereby with the blankets he is to use while at the institution. It is unnecessary to remove the tags when washing or sterilizing the blankets, and, in fact, it is difficult to remove them after they are once properly applied. Some institutions number their blankets with white indelible ink by means of a brass stencil and brush. Others simply sew on numbered tags. By reference to the blanket record book at any time it may be ascertained to which patient or ward a particular blanket belongs, and by recording in the record book the date when the blanket is put into use the number assigned gives a convenient means of checking the amount of service any particular lot of blankets has given. Such information is of use in placing new orders for blankets and in detecting careless handling in the laundry or other parts of the institution.

The cleansing of a woolen blanket infected with tuberculosis bacilli or other pathogenic organisms is an extremely important matter. No woolen blanket will stand boiling. Shrinkage alone would make this an undesirable method. At Warrensville, immediately on the discharge of a patient or at other times when blankets require cleansing, they are sent from the wards to the sterilizing

room in cotton bags. In the sterilizing room is a large rectangular steam sterilizer of the type commonly used for sterilizing mattresses and bedding. On the car which enters the sterilizer the blankets are spread in such a way as not to allow the edges to overhang the car and thus come in contact with the walls of the sterilizer, otherwise scorching is apt to occur. It should be stated that employees are instructed, when handling such contaminated bedding, to protect themselves by wearing face masks and washable clothing. Before running the sterilizer car into the sterilizer, steam at not less than 15 pounds' pressure is allowed to enter the outer jacket surrounding the sterilizing chamber, and thus surround the chamber with heat until the air in the chamber itself is well warmed with the doors of the sterilizer left open. The blanket-laden car is then pushed into the sterilizing chamber and the doors made steam-tight after closing. Live steam is then allowed to enter the chamber, coming into direct contact with the blankets. Sterilization in this manner is accomplished in thirty minutes.

The procedure for removing blankets after sterilization is very important, for, unless this is done carefully, the blankets will be found drenched with condensation water. After sterilization, the steam entering the chamber is first shut off and the escape valve opened, allowing the steam in the chamber to pass out. This is done before opening the doors and with the steam turned on in the jacket surrounding the chamber. The doors are now gradually opened at the opposite end of the sterilizer from which the blankets were inserted and in an adjoining room, the sterilizer being so located as to pass through the wall of the room having one end in one room for receiving the contaminated material for sterilization, and the opposite end in the adjoining room for removing the contents of the sterilizer without running risk of recontamination from material in the room awaiting sterilization. The blanket car is now rolled out and the blankets removed and hung up for cooling.

After sterilization we usually wash out blankets in lukewarm water and dry by the centrifugal driers of the laundry. When, however, a blanket shows no evidence of being soiled it is our custom to avoid using water when possible, and it often serves all practical purposes to "dry-clean" blankets with brushes when spread on the lawn outside during blanket inspection days.

For inspection and grading of blankets we select a bright, sunny day and spread them out on the lawn where the sun will reach them all day. Starting in the morning, the blankets are left for several hours and then turned over and left till afternoon. They are then inspected and graded, brushed, folded, and taken to the blanket store rooms. These store rooms are used exclusively for blanket storage. The blanket record book is written up, showing the grade of each blanket by number at the time of inspection, and where each blanket is stored if not in use. If a blanket is discarded a new one is requisitioned from the general stock and given the number of the blanket which it replaces, thus keeping the equipment up to the standard allowance of five blankets to each bed in the institution. During periods such as the summer months or when blankets are to be kept in storage for some length of time it is well to distribute moth balls freely in the stored blankets.

We believe that, handled as outlined, blankets can be kept serviceable for a maximum length of time, and especially we wish to emphasize the necessity for thorough sterilization by steam and sunlight for all blankets used about individuals affected with tuberculosis.

SAVING THE STEPS OF PUPIL NURSES

Loss to the Hospital Through Ill Health of Nurses—Labor-Saving Devices and Methods of Organization—The Problem of Serving Meals

"Every nurse off duty for illness is a loss to the hospital; every nurse who starts training and stops because of a breakdown in health is a loss; every nurse with broken arches, strained back or varicose veins is a loss," remarks Miss Bea W. Graves, writing in a recent number of the *Pacific Coast Journal of Nursing*. Each hospital, she says, has its own problem in saving steps and conserving the energy of pupil nurses and each must seek its own remedy. She mentions, however, a number of devices which have proved of value. In one hospital a nurse in serving three meals was obliged to walk 4,320 feet and 960 stair steps. Each patient's tray was carried separately. The purchase of a tray cart, consisting of two decks and holding eight regular trays and two medium ones, rendered the serving of ward trays far more expeditious and satisfactory.

In another very finely equipped hospital the diet kitchen was situated on the opposite side of the building from one wing of the hospital. The distance covered in serving and returning trays for meals was over two miles. The remedy for this was a dumbwaiter, trays to be served from the general kitchen below.

Another suggestion made is that nurses be trained to make their head save their heels. For instance, if a patient at the end of a corridor rings for a drink of water, it would be wise in the early part of the night to take a tray of several glasses and give a glass to each patient on the way, thus avoiding many later steps.

Again, arrangements should be made so that the nurse may sit down whenever possible; for instance, when preparing supplies, making charts and giving treatments which may just as well be given with the nurse sitting.

Sunshine is delicious, rain is refreshing, wind braces up, snow is exhilarating; there is really no such thing as bad weather—only different kinds of good weather.—Ruskin.

THE MARYLAND STATE HOSPITAL TRAIN

A Modern Hospital Train Given to the State of Maryland by Three Railroads—Trolley for Carrying Patients a Unique Feature—Complete and Elaborate

By D. Z. DUNOTT, M. D., Hillen Station, Baltimore, Chief Surgeon Western Maryland Railway Company

At a meeting held early in March by the Preparedness and Survey Commission appointed by the governor of the state of Maryland, it was suggested by Mr. Arthur W. Thompson, vice-president of the Baltimore & Ohio Railroad and a member of this commission, that a hospital train for the state of Maryland be organized. Mr. Carl R. Gray, chairman of the commission, who is also president of the Western Maryland Railway Company, immediately accepted this suggestion as a valuable one, and it was agreed that the Western Maryland Railway Company, the Baltimore & Ohio Railroad, and the Pennsylvania Railroad would each furnish a coach to be converted into hospital cars.

As chief surgeon of the Western Maryland Railway Company, I was ordered to take charge and create the hospital train at once. In short order the cars from the various railroads were sent to the Western Maryland shops at Union Bridge and the work commenced. The Western Maryland car is a steel under-swung, 60 feet from doorsill to doorsill; the Baltimore & Ohio and Pennsylvania cars are full steel, 70 feet from doorsill to doorsill. The first work was to build up the operating room, which was placed in the Western Maryland coach. Twenty-five feet of this car was partitioned off, having two wide swinging doors in the partition. The walls and ceiling were painted a soft gray and the appliances for the operating room assembled.

Fig. 1. Exterior of one of the cars composing the Maryland state hospital train.

As a result, the operating room is furnished with an operating table patterned after the one designed by John B. Murphy, table being bolted through the floor to the underframe to make it solid, a sterilizing plant, consisting of two 10-gallon water sterilizers, a large instrument sterilizer, a large dressing sterilizer, and one large utensil sterilizer. The sterilizing equipment is connected direct with the train steam line, underneath the car, so that steam can be turned into the sterilizers without heating the car. Large alcohol lamps are also carried, to be used for sterilizing in case steam is not available. Large cupboards are placed in the operating room for instruments and dressings. There are four electric fans, brilliant electric lights, surgical instrument and dressing carriage, felt-lined boxes for salt-solution flasks, of which there are twelve; Dakin solution, etc., a most complete complement of surgical instruments, and a most modern anesthetizing equipment. Two large additional water tanks are placed under the roof of this car for excess supply of water. The operating room as now equipped needs no apology.

Fig. 2. Operating room of the Maryland state hospital train.

The remaining 35 feet of this car contains seven standard white enamel hospital beds, one large cupboard for blankets, linen, etc., one toilet, one medicine closet over nurse's desk, one nurse's desk, and one patients' ice box.

The Baltimore & Ohio car contains seventeen beds, one large linen closet, one pantry containing ice box, washbasin and enclosed set of shelves, arranged especially to hold tumblers securely, one nurse's desk and medicine cabinet over nurse's desk. This car also has toilet and extra washbasin for patients.

The Pennsylvania car contains seventeen beds, pantry, and same equipment as the Baltimore & Ohio car, linen cupboard, and also nurse's desk and medicine cabinet.

Each car has a call-bell system, with indicator over nurse's desk, and push button at each bed. The call-bell system is so arranged as either to

ring a bell or to flash a red light, as may be desired by the nurse.

The electric lighting system of the train is elaborate and complete. The cars are equipped with independent generating system, with an electric train line with Gibbs connectors, so that, in case of failure of batteries in one car, by using the connectors the car can be lighted from batteries of one of the other cars. The electricity will be generated for the cars in each car, as the train is run, and, for such emergencies as may arise when the train is away from its base for some time and is not being moved, a gasoline engine with generator apparatus has been placed in the baggage car attached to the train and electricity can be stored by this head-end lighting system at convenience,

Fig. 3 (left). Patient being placed in the car on a stretcher by a chain lift. The same stretcher is used in the ambulance, and the patient is not moved from the time he is placed on it until he is placed in his bed or on the operating table, as the case may be.

Fig. 4 (right). Patient (still on the stretcher) being transferred from one car to the next by means of the trolley running through the train. The time required is twenty seconds. The same trolley carries food and trays from the dining car to each patient's bed.

always assuring ample lighting facilities. This will permit the electricity to be generated in the absence of the engine. The lighting system in each car is so arranged that lights work independently on push buttons, and you can obtain full lighting capacity of the car, a smaller number of lights if desired, and several of the lamps are arranged in each car with dimmer system, so that a very mild, soft light can be obtained when necessary. There are four electric fans for each patient car.

Each bed is furnished with one oilcloth sheet, ten sheets, the same number of pillow cases, one pair of fine gray blankets, four spreads. For patients, each bed has four nightshirts, towels and other essentials necessary for comfort and well-being of the patients. Hot-water bags, ice bags, and all other essentials that go to make a well-equipped hospital are found on this train.

The surgical dressings are made according to hospital standards, and the supply will be kept up by a class of volunteer workers.

The train also has as a part of its unit a baggage car, which not only carries the gasoline engine, but will also carry two Ford ambulances, each ambulance having capacity of four patients. The car has been so constructed that the ambulances will be loaded and unloaded from the end of the car. The baggage car has also been donated to the equipment by the Western Maryland Railway Company.

The train complete consists of an ambulance car, one combined operating room and patient car, two full hospital cars (capacity of patients for the three cars, forty-one), dining car and a sleeper for the personnel. The beds are placed side by side, running crosswise of the cars, with 12-inch aisle between each two beds and a foot aisle running on side of cars at foot of beds 30 inches wide, which gives ample passageway and allows free ventilation without exposing patients to window draughts.

A unique feature of the train is the installation of an overhead trolley, running from the end of the vestibule of each car through to the opposite end of the vestibule, and connecting to the trolley

Fig. 5. Interior of a ward car of the Maryland state hospital train. At the further end is the stretcher containing a patient, suspended from the trolley running through the train.

wheels is attached a small chain lift, which in turn lifts the stretcher, which has been especially constructed so that a patient can be taken to the end of rear of patients' car, placed on this trolley and carried to his bed in whatever car he is placed without being moved from this stretcher. The stretchers have been made so they readily pass through the doors and in addition are also used in the ambulance. Consequently, the patient, once lifted into the ambulance, after being placed on the stretcher is not again moved from the stretcher until he is placed in bed or on operating table, as case may be. The trolley is also arranged so it can carry food and trays from the dining car to each patient's bed.

Each car has tables and chairs for the comfort of the patients. All doors, windows, and ventilators are covered with the finest mesh brass screens.

The personnel will consist of three surgeons and an anesthetizer, two graduate nurses, four nurses' aids, two orderlies, and one electrician. The doctors' and nurses' aids are volunteers, serving without pay, also ambulance drivers. The ambulances were the gift of one of the gentlemen who will drive an ambulance for the train.

The funds that have made this train possible have come from the state of Maryland, the Maryland Society of Colonial Dames of America and from individual sources. The work of equipping train, preparing dressings, etc., has all been done by volunteers.

The train, as it now stands complete, represents one of the many steps taken by the state of Maryland in its effort to prepare for any emergency that might arise out of the present war, and it is a comfort to the many people who have visited and inspected this train to know that one of the first thoughts of the governor of the state of Maryland and the Preparedness and Survey Commission of the state has been toward the care, comfort, and aid of those who might be injured in the service of their country or their state. The people of Maryland are justly proud of the fact that this is the first train of its kind that has been placed in commission in the United States, and that, no matter how many more trains may be developed during the present war, Maryland has blazed the trail in this service.

As "he also serves who only stands and waits," so stands the Maryland State Hospital Train, with its personnel ready to respond to the calls of its country and its state, its object, its reward.

STANDARDIZATION OF HOSPITALS—THE UNIVERSITY OR TEACHING HOSPITAL

Items That Enter Into the Efficiency of the Ten Departments, With Percentages Apportioned to Each Under Scheme Published Last Month—Some Discretion to Be Allowed in the Markings

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IN our last paper we discussed the several departments into which a hospital might be divided for purposes of measuring standards; and we accorded to each of these departments what we thought was a fair percentage of allowance, assuming the perfect hospital to represent 100 percent and each of the departments a fair proportion of that total. We also indicated some of the features of each department that should be used in the marking.

This month we propose to discuss some of these departments and to indicate as clearly as may be what Class I, the university or teaching hospital, may be expected to do and be and have in order that it may receive the highest marking permissible in this standardization scheme.

MEDICAL STAFF

Attending Staff.—First let us take the medical staff, including the visiting staff, the house staff, and the nursing department. Miss Wheeler does not like the idea of scheduling the nursing department as a part of the medical staff. She thinks that department should be considered an independent one, given a higher total percentage mark than 15 and that it should be adjudged separate from the other departments. Some of us have thought that the nursing department is actually a part of the medical staff and that 40 percent was not too high a percentage to be given to the whole of the medical staff, leaving 60 percent for the rest of the hospital.

Let us now discuss the attending staff, to which we have accorded a possible 20 percent in the marking; and we are thinking about the following heads: personnel of the staff, completeness of the scheme of organization, responsibility of staff heads, simplicity of the organization, team-work, original work, investigation and publications.

It has been said that a hospital can be no better than its medical staff, and that the character of medical men in a community can be judged largely by the character of the hospital in which they work. If that is true, then the character of med-

ical men in a university or teaching hospital is the most important feature of the institution, and more weight should be given to the personnel of the visiting staff than to any other single feature. A medical man may be a physician of the highest attainments in his profession and of the highest standing among his fellows, and yet he may be a poor staff member—sometimes because he seems unable to do team-work with others, in other cases because he fails to realize his responsibility to the institution and as a part of its administration, or because he fails to keep up with the literature of the department in which he is engaged, and sometimes, again, because of personal peculiarities or moral obliquity. No medical staff in a hospital can be rated high whose members are appointed because of favoritism, political or social influence, or for any other reason than personal and professional fitness. The school of which the teaching hospital is a part would suffer in even a larger measure by the unfitness of its faculty members, and, as most schools are located where there is a wide choice of medical men for faculty membership, school or teaching hospital staffs are usually of a very high character because the success of the school itself depends on this.

After the personnel of the staff, the most important feature is the scheme of organization, its completeness and simplicity. This means that there must be an organization very definite in character, with clear-cut departments having responsible heads and with other members whose work can be coordinated like the parts of a well-running machine. There must be not only good team-work in each service, with a responsible head, but also good coordination between the services. We are not thinking now about the teaching factor or about the care of patients alone; as, for instance, a patient is brought into a hospital and in the admission room, after a casual examination, is assigned to a particular service. The diagnosis may be obscure after the patient is in bed; it may be a border-line case. If the service to which the patient has been sent fails to call in the other services for counsel in the case, there is lack of team-work and coordinated effort, and to this extent that hospital fails to give that patient the best that modern medicine has to offer in diagnosis and obviously in treatment. The hospital failing in this coordination should be demarked for the neglect.

Some hospitals in this country have built whole libraries from their medical records, the most valuable statistics and data in the literature, data worked out of the personal experiences of the men in the hospital. The libraries in most hospitals in this country are absolutely worthless because of the carelessness and neglect of members of the medical staff in the keeping of their records of cases. A teaching hospital is not to be forgiven for failure to keep proper records; if records are not properly kept the medical staff is to blame and the hospital should be demarked for the failure.

A hospital in which good records are kept is doing work of investigation and its own records are being used for the purpose; the hospital should be well marked because of this fine point.

The medical staff in a hospital in which good records are being kept and investigation carried on will be stimulated to publish its work and good work will come out of such a hospital. The hospital should be marked accordingly and demarked if its medical work is not being published.

The House Staff.—The house staff in a hospital is just what the visiting staff makes it, and in a teaching hospital the members of the house staff should be the best young men who graduate from the institution. They should be chosen because they are the best, and if they are working under a high-class visiting staff, made up of members of the faculty of the school, they will be kept on their tiptoes, eager for information and for hard work. If the visiting staff is the right sort, the house staff will respond to the demands made upon them. They will see that hard work is done on each patient, that the laboratory work is efficiently and adequately performed, that the nursing service is up to the mark, and that personal attention is given to patients.

We have allowed only 5 percent as a total for the house staff, for the reason that the character of the house staff is dependent on the character of the visiting staff; the former is not an independent body. Of this 5 percent the personnel is the most important thing; the plan of organization, the discipline and the team-work come next. In most hospitals the house staff is organized to suit the convenience and personal interests of members of the visiting staff and not for the best good of the hospital as a whole, of the patients, or of the interns themselves. Only a rotation service is an adequate service for the training of young medical men; too frequently the house staffs of teaching hospitals are not organized with rotation service for interns—because the chiefs of the medical services prefer to have interns remain a long time in their service so that they may be broken into the individual ways and methods of their seniors and thus save trouble in the training of new men. This method serves to create specialists in the intern staff, although the intern who is permitted to specialize is not obtaining a general or rounded training in the fundamentals of medicine. A young man who goes on the surgical

service is neglecting his greatest opportunity for diagnosis under the specialists in the other services and such a man, when he leaves the hospital, will not be a well-rounded-out man. We know interns that are leaving some of the best hospitals in the country, affiliated with some of the best medical schools, who have served almost their entire internship in one department and who consequently know almost nothing about general medicine—men who are being molded into surgeons, knowing nothing about the eye, and absolutely nothing about obstetrics—and yet these men when they go out into private practice cannot at once jump into a specialty and they will fall down deplorably in the general practice that must inevitably fall to their lot before they have secured their place in any specialty. Therefore, the hospital that has rotation of service should receive a high mark and those that confine their interns to one or two services under one or two specialists should be marked far down in the scale.

Moreover, an intern corps in a good hospital should handle its work with almost military precision, as part of a team and not as an independent unit.

The Nursing Department.—There are two organizations upon which a nursing corps must be based: first and most important, the medical side of their work, and, second, the administration of the corps itself. Just as in the case of the interns, if there is a fine medical staff with proper organization and made up of the right sort of men, the nursing work of the institution must be of the highest character; after all we are training young women in our hospitals to nurse and care for the sick, and this part of the training must be inspired and fostered by the medical staff.

To a large extent, however, this medical side of nurse training, especially in our teaching hospitals today, is directed by the heads of the nursing department who have already had their training and education under able medical men and women. So that the personnel of the heads of the training school is a most important factor and a high mark should be given to a training school that has high-class heads. But one cannot make a "silk purse out of a sow's ear" or good nurses out of poor material; consequently the personnel of the training school is highly important. Teaching hospitals are usually regarded as good hospitals in the community and consequently they usually have less trouble in securing good material out of which to make nurses than other institutions. If hospitals but knew it, the higher their standards are maintained, the easier it will be for them to secure candidates for the training school. That is proved in every well-conducted hospital in this country; even some very small institutions without a school affiliation find no difficulty in obtaining the best material for their training schools, solely for the reason that their standards are kept high.

But it takes more than finely trained and exceptionally intelligent heads of a nursing department, and more than well-educated, cultured, refined, and well-bred young women to make an exceptionally good training school; it takes system and organization—a good arrangement of the working services, a good curriculum, well maintained, good discipline, well-kept records, and last, but not least, good living conditions for everybody in the training school, heads and pupils.

LABORATORIES

One of the chief functions of the university or school hospital being to teach the practice of medicine, all of the facilities of the hospital should have a teaching purpose notwithstanding the fact that these facilities are in constant use and selected with a view to the care, cure, and comfort of the sick. A great deal of the routine work in the laboratories of such a hospital is performed by the students, but should invariably be done under the direction and control of trained experts, and these experts should always be in close affiliation—indeed, in direct contact—with the clinic; that is, with the patients.

There is a difference of opinion among the best laboratory men whether the hospital laboratory in a teaching institution should be directed by one person and all activities of the laboratory center under this one control or whether the laboratory should be divided up, each service having its own independent organization, its own director, its own personnel, and in its own quarters. The solution of this problem will hinge upon the character of the laboratory men available or in the service, but, whichever way it is decided, there must be some system of arrangement by which the laboratory itself, in some way, can be made a rallying point and a center for study and investigation for the various services, because in a final analysis things that will be of interest to the medical service will not be paramount in the surgical section, and those things that will be of interest in the children's department might not be of special interest to either of the others, and so with obstetrics and the many specialties in the hospital.

The scheme of organization as indicated above is a very important factor in the laboratory, and upon a proper settlement of that scheme will depend the successful operation of the whole hospital, including the study and investigation and the

scientific atmosphere of the institution and the publications that emanate from it.

We have allowed 10 percent as a high mark for the perfect laboratory; without question the personnel is entitled to at least half of that allowance; the coordination of all the agencies for the study of disease; that is, the laboratory and the clinical services, should be entitled to 3 percent more, and 2 percent is a sufficient amount for the physical equipment and for the architectural arrangement of space.

We need not go into the activities of the laboratory. These will be definitely fixed if the personnel and the atmosphere are right.

The X-Ray Department.—Space is a very important matter in an x-ray department in a school or teaching hospital because large numbers of students must be accommodated. Thirty-five hundred square feet is none too large to furnish (1) a waiting room, (2) consultation room and plate exhibit, (3) a roentgenographic room, (4) a roentgenoscopic room, (5) treatment room, (6) plate developing or dark room. Some of these spaces can be eliminated if there is a switchboard room located between two or more of the other operating rooms and the space may be thereby somewhat curtailed.

The x-ray rooms should not be located in the basement or in the attic of the hospital. They should be convenient for patients from any part of the house, away from noise and bustle as much as possible, and out of sight of the curious. If there is an out-patient department on whose patients x-ray work is performed, the department should be located conveniently to the out-patient unit. It is not necessary that the x-ray department be located contiguous to the operating rooms, because it will be rare that x-ray work will be done on patients that are going to or coming from the operating room.

In cystoscopic work with collargol or other opaque mediums in ureteropyelography it is an advantage to have the cystoscopic room convenient to the x-ray room in order to lessen the danger of discomfort to the patient. Differing vastly from the pathological department, in which equipment is a minor consideration, the x-ray department needs large and expensive apparatus, and it may be doubted whether we could render a better service in helping to standardize this department and to evaluate it according to its deserts than to give what we believe to be the necessary equipment in an x-ray department in a school or teaching hospital. We are giving this list below.

As in the laboratory of pathology, the most important factor is the personnel, the director and his associates, and in these days and because it is necessary to include a dark room and photographic room, we have sometimes incorporated the general photographic plant of the hospital with the x-ray department, using dark rooms and developing facilities for both.

The apparatus should include the following:

ROENTGENOGRAPHIC EQUIPMENT

1 large capacity x-ray transformer with control, switches, meters, etc.
1 x-ray table with horizontal stereoscopic plate shifter with accessories.
1 (or 2) batteries for Coolidge currents.
1 vertical stereoscopic plate shifter.
1 x-ray tube stand with various-sized cones and accessories.
1 x-ray exposure time switch.
1 head rest.
1 large x-ray plate lead chest.
1 eye localizer apparatus.
2 6-tube racks.
1 lead-lined operating booth (or floor screen).
2 each 8×10, 10×12, 11×14, 14×17 x-ray intensifying screens and cassettes.
Overhead high-tension wiring, trolley reels, tube connectors, wall insulators.
Accessories of wood, blocks, covered bricks, etc.
1 fine-focus Coolidge tube.
1 medium-focus Coolidge tube.
1 broad-focus Coolidge tube.
6 7-inch tungsten target gas tubes or 2 hydrogen tubes.

DARK-ROOM EQUIPMENT

1 developing tank (Bowen model or similar).
12 large (11×14, 14×17) developing frames.
24 small (8×10, 10×12) developing frames.
1 ruby dark-room lamp (No. 2 Wratten or similar).
Chemicals for developing solutions, fixing solutions, etc., scales, graduates, glassware, etc., rubber aprons, gloves, etc.
1 small clock.

ROENTGENOSCOPIC ROOM

1 small-capacity x-ray transformer.
1 vertical roentgenoscope, with 1 Coolidge tube (special fine focus) arranged for orthodiagraphic projection, with 11×14 or 14×17 screen.
1 horizontal roentgenoscope, with 1 Coolidge tube (special fine focus).
1 11×14 or 14×17 screen.
1 high-tension throw-over switch, with necessary overhead copper wires.
1 heavy lead rubber protection apron.
1 pair heavy rubber protection gloves.
1 (or 2) foot switch control to x-ray tubes and overhead blue or red light, or preferably finger push-button control by magnetic switch.
1 accessories for barium meal administration and for barium clysma.
3 transparent celluloid sheets same size as screen for orthodiagraphic work, etc.

ROENTGENOTHERAPY ROOM

1 large-capacity x-ray transformer to deliver 10-inch spark gap continuously, with rheostat, control switches, meters, spark gap indicators, etc.

1 lead-lined operating booth for all controls, rheostat, meters, etc. (or lead floor screen for protection).
1 x-ray treatment tube stand with various-sized lead cones, etc.
1 broad-focus Coolidge tube, with controls, batteries or transformers, etc., overhead copper high-tension wires, trolley reels, connectors, wall insulators, etc.
1 treatment time switch, lead sheets for protection of skin, lead rubber sheeting, accessories, etc.
1 couch or low table with soft mattress.
1 table for accessories.
Chairs.

DIETARY DEPARTMENT

The dietary department of a university hospital should pass inspection under the score-card system and obtain a rating far in advance of that of any other type of hospital in existence.

Beginning with the dietitian, we should find the woman in this position a person of university training or its equivalent, with at least several years' experience behind her. If she is skilled in any other line of work than dietetics, so much the better for her breadth of vision and usefulness.

In an article entitled "The Status of the Dietitian, Past and Present," written two years ago and published in this magazine. Miss Graves gives an excellent description of what we should expect of the dietitian in a hospital of the highest rank.

Such a woman, educated, well-trained, mature, broad-minded and experienced, should have charge of the entire dietary. In a hospital of 250 beds and over, at least one assistant will be needed to attend to the details of housekeeping. Under the assistant a competent man or woman will be at the head of kitchen and serving rooms. The topographical arrangement of the department may require more than one such person. In that case the hospital itself should be rated for inefficiency rather than the dietary department.

General oversight over all the dietitian must have, but trivialities will be spared her in a high-class organization. The more minor details she is required to be personally responsible for, the lower the rating of the dietary department in this respect.

The dietitian will be expected to teach at least the advanced work in dietetics. She may or may not have the cooking lessons taught by a teaching assistant, but the instruction must go on under her direction. Proper teaching cannot be done or good results obtained unless the cooking laboratory is properly lighted, ventilated, and equipped, and is of suitable dimensions. The lessons and lectures should be given at a time when nurses are not unduly weary from too many hours of work. At least two and one-half hours are required for a cooking lesson, and the course should consist of an adequate number of lessons—from twenty-four to thirty-six—calculated to give the pupil nurses an intelligent understanding of the subject.

In some localities pupil nurses may enter their hospital training already fairly well instructed in the first principles of foods and cookery, but in no case should they be entirely excused from hospital dietetics. This subject cannot be finished outside of a hospital.

The diet kitchen and its closely related features require a series of rooms to carry out their operations in the best way. A teaching laboratory is essential, with individual equipment for the student nurses. Adjoining this should be a small dining room in which the foods prepared in the cooking lessons may be displayed or served. This room also may have other uses, as will be mentioned later on.

The main diet kitchen should either connect with these rooms or be close by. Here (in the main diet kitchen) pupil nurses are drilled further in the theory and practice of dietetics by preparing foods for prescription diets and filling type diet orders which cannot be conveniently done in the general kitchen. The quality and variety of these type diets will be judged not only by the ingenuity shown in their preparation, but also by the methods of transporting them to the ward or to the individual patient.

In the diet kitchen also student dietitians may do post-graduate work in the practical side of hospital dietaries. The university hospital owes it as a duty to the profession of dietetics to receive as many well-trained students as it can possibly accommodate with benefit to the institution, either housing them during their stay or paying a small salary to cover expense of living.

In the work of the diet kitchen, the dietitian should cooperate with the chemist and physician in the preparation of such diets as are needed not only for clinical diagnosis or study, but also in diet therapy for the regular physician.

And finally, but by no means of the least importance, the student physician should be considered. In the class laboratory, as before described, opportunity may be given for individual study of diet and dietaries, foods and food preparation, and those student physicians interested in diet therapy can actually know what this or that diet so often glibly prescribed may mean to a patient to consume or a dietitian and her pupil nurses to prepare.

The diet kitchen itself should *not* be a class room for teaching cooking. Satisfactory instruction cannot be given nor can the routine work of the diet kitchen be properly carried on if conflicting operations are in progress.

The dining room hereinbefore mentioned in

connection with the teaching laboratory gives an opportunity for welfare work among the general hospital personnel. Any employee, nurse, or doctor who needs temporary or emergency attention to diet can be sent here for that extra care. The results under proper management can only be beneficial. But it must be remembered that human nature is so constituted that half of the population would demand extra care, did wisdom not distinguish between what is necessary and desirable and what is imaginary.

Welfare work in diet cannot make up for what is lacking in other lines of social service work. And in the university hospital surely the social service department will be carried on and supported by strong, sensible supervision. And thus is indicated still another place where cooperation with dietitian and dietary department is advantageous.

If the hospital is run for the sake of treating patients as well as for educating nurses and doctors to the end that they may earn a living, the individual patient needs to be considered as far as possibly can be done while considering the welfare of the institution in general. It is in the light of this statement that the dietitian needs to work directly as an officer of the hospital and in cooperation with the physicians and nurses. It is for this reason that her personal interest in the patients' dietary in general and also in particular cases is of great advantage, especially when head nurses are young and inexperienced.

Proximity of the dietitian's headquarters to the lines of travel of other departments, official, pathological, chemical, and medical, and also to her primary responsibility, the kitchens, serving rooms, and dining rooms, are necessary arrangements in the building plans of the hospital.

The quality and variety of type diets for various orders should not pass by the dietitian without a question. The significance of the caloric value of the diet, physiological needs of the patient, physical and chemical composition of food, often have far more need of attention than the prescribing physician gives due heed to; and the same inane formula may be filled day after day if no one dares to question the real value to the patient.

Each day in the hospital come three important events in the lives of everyone—the three meals. The kitchen, the serving room, the dining rooms—shall they be well or badly located, well-lighted or gloomy, stuffy or swept by fresh breezes of pure air, openly planned and laid out or full of dark crevices and corners to be the denizens of vermin? Shall they be conveniently arranged or shall labor be doubled and trebled by crossing and barring lines of travel and tracing and retracing of routes? Shall sanitation be studied in every possible way from the delivery of the article of food to its consumption? Shall employees be uniformed, inspected, provided with sanitary quarters and compelled to observe clearly methods of procedure? Look for the signs of all this both on formal inspections and also when employees are off their guard.

What machinery shall we expect to find in an institution kitchen of this size, and has satisfaction been given by the kind or variety chosen for the purpose? Is the machinery placed most conveniently for the operator and for the employees served by the machine? As a test of efficiency, follow some operation from start to finish. Or take some article of food and trace its path from its entrance into the hospital store over the various routes it is transported or carried until it reaches the plate of the patient or of one of the hospital family—how many unnecessary trips did it make because of badly arranged equipment? Such a proceeding is instructive to managers and heads of departments.

THE PHARMACY

In these days of the supremacy of the dietary the progress and advancement of the hospital pharmacy is crablike, and, in proportion as the various laboratories, x-ray department and the dietary grow in importance, the drug department recedes and becomes less important.

And yet, medicines really are necessary, and a vast number of medical and surgical appliances and their appurtenances are bought in large quantities or are made in the hospital out of raw materials, and consequently the pharmacist's office is important, first in organizing and managing his department in such a way that every advantage may be taken of markets and prices and that crude materials of low cost may be prepared and used to the best possible advantage and at the lowest price. Next, the program or scheme of organization of the pharmacist's department is a matter of the greatest importance and of equal or even greater value is the personnel, the director himself.

Dr. W. A. Puckner, secretary of the Council on Pharmacy and Chemistry of the American Medical Association, suggests that it is highly important and desirable that the purchasing of hospital pharmaceuticals be based on a standardized list of drugs the value of which has been established. These established drugs, because of their extensive use, are invariably of a high quality, and, because of the large demand, are sold under competitive conditions and therefore at a relatively

low price. Such a standardized list of drugs may be found in "Useful Drugs," which has been prepared by the Council on Pharmacy and Chemistry, and which, we are informed, has been taken as a guide by the Medical Council of Defense in the selection of the drugs which are to be supplied to our armies in the field.

The hospital pharmacist need not be to any great extent a laboratory man, but he should be a well-educated, well-informed, trained pharmacist, who has a thorough knowledge of drugs, both as concerns their market conditions and as concerns the method of examination for purity. He should know which drugs are likely to require examination and should be able to make tests for purity.

There is an immense amount of technic involved in the preparation, distribution and giving of medicines and the time and energy of a large number of orderlies and nurses can be either conserved or dissipated according as the method of handling these things is efficient or poor.

The architectural arrangement of the pharmacy does not matter a great deal, but it is important that there be conveniences and that these conveniences be arranged so that the least possible time and energy are required to take advantage of them, as, for instance, the compounding department should be the center of the items that are to be compounded and all these should be within easy reach. It is important also that the refrigerators be convenient of access and especially that the storage space for serums, antitoxins, etc., should be correctly built, correctly temperatured and automatic of control. It is important also that the larger storage space for drugs of wholesale character shall be of proper temperature and conveniently located. A poor arrangement here means time wasted.

The most important thing about the architecture of the pharmacy, however, is in the arrangement and design of the medicine cabinets on the various units of the hospital. This is the place where the time of nurses and doctors can be wantonly dissipated or greatly conserved.

In the interests of the rational and individualized treatment of patients, however, the convenience of the unit should not be carried to the extent of numbering the various medicaments and thus forming in the physician the habit of prescribing numbers instead of drugs, a condition which in the past not only has been detrimental to the patient in the hospital, but has had a degrading influence on the whole medical profession because the hospital intern of today becomes the practicing physician of tomorrow and carries over into his general practice the bad habits that he learned in the hospital.

So that we have the five points in the marking of the pharmacy as indicated in our last number and it will be convenient to distribute the 5 percent which we have allowed to the pharmacy equally among all these items.

OUT-PATIENT DEPARTMENT AND SOCIAL SERVICE

This is the newest and probably the least developed of all modern hospital activities, at least there are fewer good dispensaries or out-patient departments in the hospitals of this country than is the case with any other departments into which we have divided the hospital. Mr. Davis has studied this problem very carefully. Of the 5 percent which we have allowed for these branches of service, Mr. Davis devotes 2 percent to scope of the work and the personnel, 1 percent to management, including team-work with other departments, 1 percent to the record-keeping system and 1 percent to the architectural arrangement of space.

Social service work is not necessarily connected with the out-patient department. The book by Miss Ida M. Cannon, entitled "Social Work in Hospitals" (Russell Sage Foundation, 1910), describes fully the organization and methods of social work in hospital wards and in out-patient clinics, and may be referred to with profit.

Mr. Davis illustrates his conception of the relation of the hospital to the dispensary, and we are reproducing his chart, and his ideas as to what the dispensary and out-patient department of a university or teaching hospital should be.

The story told by the chart may be explained in more detail. A hospital needs an out-patient department for three main reasons:

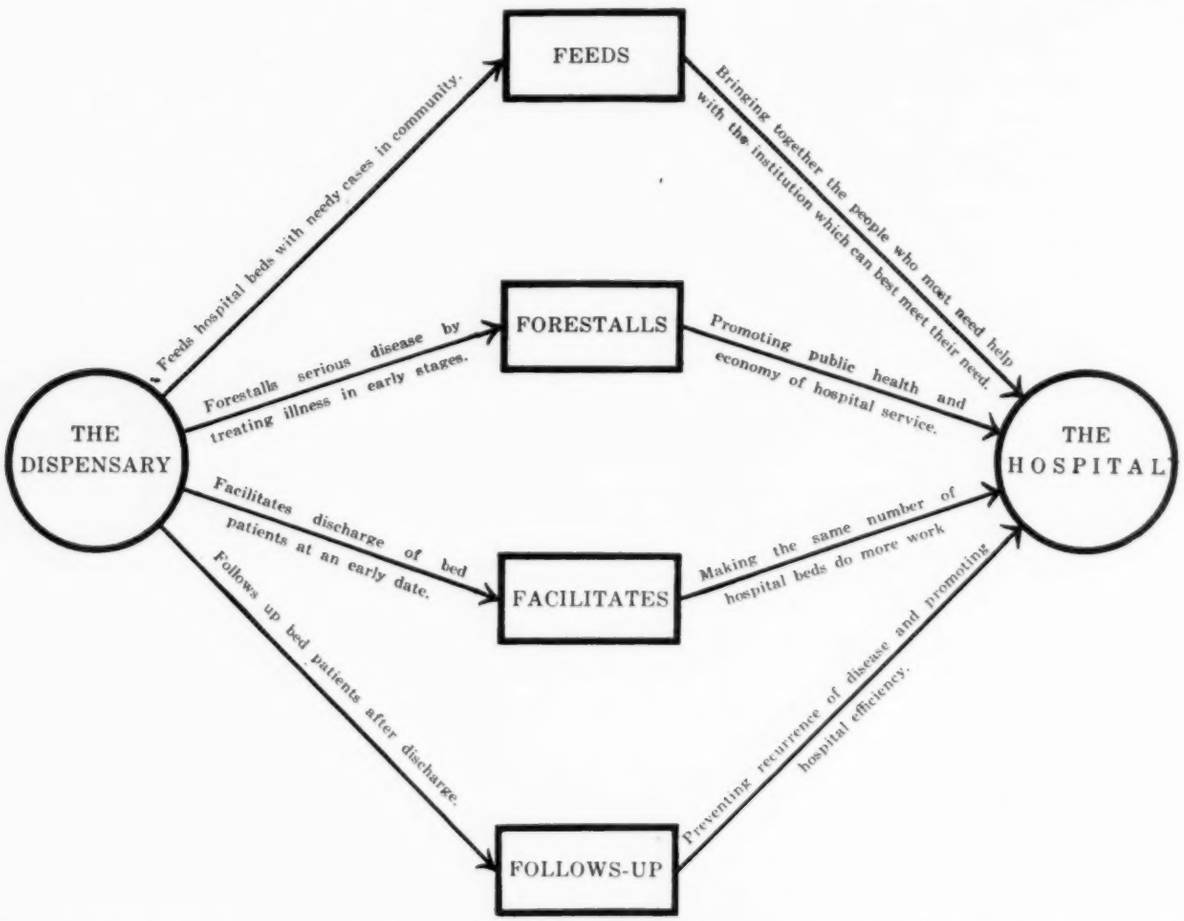
1. The out-patient department increases the medical efficiency of the hospital itself.

Let us remember at this point that an out-patient department is not necessarily confined to hospitals doing charity work or to the charity patients of hospitals which have private rooms as well as ward rooms. An increasing number of hospitals, especially in communities of moderate size, maintain out-patient departments for cases which go into private or semi-private rooms. Such out-patient departments are usually to carry out surgical after-care, dressings, etc. The fees for such out-patient departments are usually arranged on some understanding with the doctor so that he has a share of the amount collected, the hospital usually receiving something to cover the administrative expense. This plan can readily be extended beyond surgical cases. Its value and practicability depends on local conditions.

Such a clinic is an illustration of the manner in which the hospital out-patient department contributes to medical efficiency. It promotes thorough follow-up of cases after discharge from the wards. When a patient is a working man and needs care following his period of confinement to the hospital bed, it is obvious that a systematic following-up of his case will promote his complete return to full working strength. All too many relapses follow upon the discharge of patients who are able to leave a bed, but not

able to return to work or to their homes unless under medical supervision. The out-patient department is needed to make the medical efficiency of the hospital beds reach its maximum.

Care in a hospital bed is only a stage in the history of the patient's illness. The out-patient department of the institution enables medical care to extend over the whole course of an illness instead of merely its bed period. An out-patient department can often by treatment prevent a disease from becoming serious and thus forestall the use of the hospital bed itself. By thus forestalling serious disease, and also by following up disease after the discharge from the hospital bed, the out-patient department links up the acute illness with the preliminary or with the convalescent stages and promotes medical efficiency all around.


FEEDS
Feeds hospital beds with needy cases in community.
Bringing together the people who most need help with the institution which can best meet their need.
FORESTALLS
Forestalls serious disease by treating illness in early stages.
Promoting public health and economy of hospital service.
THE DISPENSARY
THE HOSPITAL
Facilitates discharge of bed patients at an early date.
Making the same number of hospital beds do more work
FACILITATES
Follows up bed patients after discharge.
Preventing recurrence of disease and promoting hospital efficiency.
FOLLOWS-UP

2. The out-patient department promotes medical and administrative economy.

Forestalling serious disease is not only a contribution to the medical efficiency of an institution: it is also an economy. The substitution of ambulatory for bed care means a great saving. By the use of the out-patient department in following up discharged hospital cases, it is frequently possible to send a patient out from a hospital when, without the out-patient department, the physicians or surgeons would have been unwilling to discharge him. It is not too much to say that an increase in efficiency of from 10 to 30 percent (the proportion has been estimated as over 50 percent in some services, such as the orthopedic) is gained by an efficient out-patient department. The same number of beds will go this much farther in providing service, because of the more rapid turn-over of cases.

In a teaching hospital, an out-patient department fulfills an important function of supplying the ward with cases which are not only needy, but are interesting from the scientific or pedagogical standpoint.

3. The out-patient department furnishes a hospital with an additional and attractive basis of appeal for financial support.

A well-managed out-patient department interests people who may give to the hospital. It is full of concrete cases of human need; it interests a visitor. A children's clinic, for instance, or an orthopedic or a dental clinic, is replete with vivid appeal. The out-patient department is used by other organizations—the Associated Charities, the visiting nursing associations, the public schools, industrial establishments sometimes—and thus the circle of those who feel the influence of the hospital is widened. It affords avenues for social as well as strictly medical service which can be utilized as new means of increasing the interest of the community.

And, after all, the reasons why most hospitals need an out-patient department depend on a larger reason, viz., that the community itself needs the out-patient department. There are people in every community who cannot afford to pay for private medical service. However willing individual doctors may be to give their services to especially needy cases in their private offices, most cities and practically all industrial communities need dispensaries. The best place for a dispensary treating general diseases is in conjunction with a hospital as an out-patient

department thereof. If the hospital responds to the need of its community by establishing an out-patient department to meet the need, it furnishes for itself a new basis of support. A well-managed out-patient department, of course, involves expense, but it is the kind of expense which in the long run will pay dividends.

MEDICAL RECORDS AND ACCOUNTING

We have allowed 10 percent for medical records and accounting, 5 percent for each, and the items will be practically the same; that is, the first item will be the comprehensiveness of the plan, the second, simplicity; the third, cohesion and coordination between the medical records and the financial operations. In the medical records there is one more item, viz., the value of the records for scientific purposes; that is, for the literature, and in the accounting that item is balanced by what we might briefly term information. There are many beautiful systems of bookkeeping which apply to hospitals and which are accurate, comprehensive and simple, and which yet do not give to the busy superintendent who happens not to be a certified accountant the information immediately available that will enable him to take advantage of various opportunities to save or make money for his institution. Many a hospital has fallen into financial straits because the superintendent did not have and could not get the information that would permit him to know which of his departments were making and which were losing money and how much. It is necessary not only that this information be available, but that it be constantly available, immediately available.

We are not by any means agreed as to what a competent medical record system is or shall be and we differ quite as radically when we come to the bookkeeping of the financial operations. Both these points are to be solved soon and satisfactorily; the point is made here that medical records and the accounting system are grouped as one department and for the reason that they are interdependent and cannot be separated advantageously; for instance, the financial department of the hospital is intensely interested in the admission and discharge of patients and even more interested as to whether the patient is a paying one or free. The accounting system is also deeply interested in what is done for the patient in the hospital, whether he has antitoxins or serums administered, or x-ray pictures taken on a surgical operation, because in most hospitals all these constitute special charges, although they should not do so.

ARCHITECTURE

We have allotted to architecture a maximum of 5 percent in the marking of a hospital on a basis of 100 percent. We might divide this 5 percent into five parts with 1 percent for each: (1) plan of the hospital as a whole; (2) plan of the auxiliary installation, such as plumbing, steam-fitting, power plant, elevators, ventilation, vacuum cleaning, laundry machinery, system of sewage and garbage disposal; (3) the execution of details (so many hospitals are sloppy in appearance because of want of attention to details); (4) materials employed both in the hospital itself and in the auxiliary installation; (5) economy both in planning and in the administration of the institution.

EQUIPMENT, MEDICAL, SURGICAL, AND PHYSICAL

We have allowed 10 percent on equipment, 5 percent of which may be distributed to medical and surgical equipment and another 5 percent to what might be termed purely physical. The medical and surgical equipment consists of the equipment of the scientific units, the operating and dressing rooms, the ward apparatus, such as percolators, appliances for lifting and handling patients, dressing carts and stretchers and apparatus for nursing, such as rubber goods, bed-pans, urinals, irrigation apparatus, etc.; cautery apparatus, electric batteries, cystoscopic instruments and the like, surgical dressings, including bandages, gauze, cotton, etc. The completeness of this equipment depends not on its elaboration, but on the amount of apparatus necessary to do the things that the doctors order done, and under this head will come also the various so-called technical "boxes," such as hypodermic outfits, venesection outfits, spinal puncture apparatus, irrigation outfits, etc.

The physical equipment is obvious: beds and their appurtenances, back rests, head rests, body rests of various sorts, good springs and mattresses (mattresses capable of being sterilized and renewed), tables, chairs and the other furniture that goes to the equipment of rooms, wards, etc., in the hospital. One of the high marks in this particular item would be the fitness of all the furniture for the purpose which it is to serve.

MANAGEMENT—ALL DEPARTMENTS

The success of any hospital will depend very largely on the coordination of the various departments. Of the university or school hospital is this especially true, because the teaching function is one of prime consideration. This function is in the hands of the medical staff, which is the faculty of the school, and unless all the physical departments of the hospital are coordinated and made to work for the benefit and in keeping with the plans and purposes of the school there will be failure in results; therefore the organization of the administration of the hospital is highly important. One of the five points allowed for this department should go for organization.

One point should go for personnel, the superintendent and department heads, because, unless these people are efficient and know their business, then the scheme of organization is no good.

Two points should be reserved for the handling of people, the public, the staff, the patients, the employees and the trades people. It makes every difference in the world in a hospital whether there is courtesy shown by everyone in the institution to everyone from the outside. Entirely too frequently the people in a university or teaching hospital are allowed to feel themselves independent and to treat outsiders brusquely, not to say rudely.

One point may be given to cleanliness and order in the hospital. This is a large subject in itself, and we would like to apportion a greater amount of credit for a well-kept, orderly institution. The walls and floors should be clean, runners and rugs should be neat and have no frayed edges, the furniture should be neat and show evidence of having been cleaned and polished. Patients' beds and those in the nurses' home and in the house staff department should be well made and neatly set up, pillows smoothed out, sheets well tucked in. The patients themselves should be kept neat and clean, faces and hands washed, nails attended to and hair brushed. It should be insisted that the kitchen must be clean and neat, also the serving rooms, the utility rooms, the dispensary, and admission rooms. Many times the reception halls and parlors are about the only places in the hospital that are clean and neat. Order and cleanliness, of course, are to be valued, not for themselves, as sacred and superhuman ideals to be exalted above comfort, convenience, and all other considerations, but just in proportion as they contribute to the sanitation and smooth working of the hospital, and, above all, to the welfare of the patient.

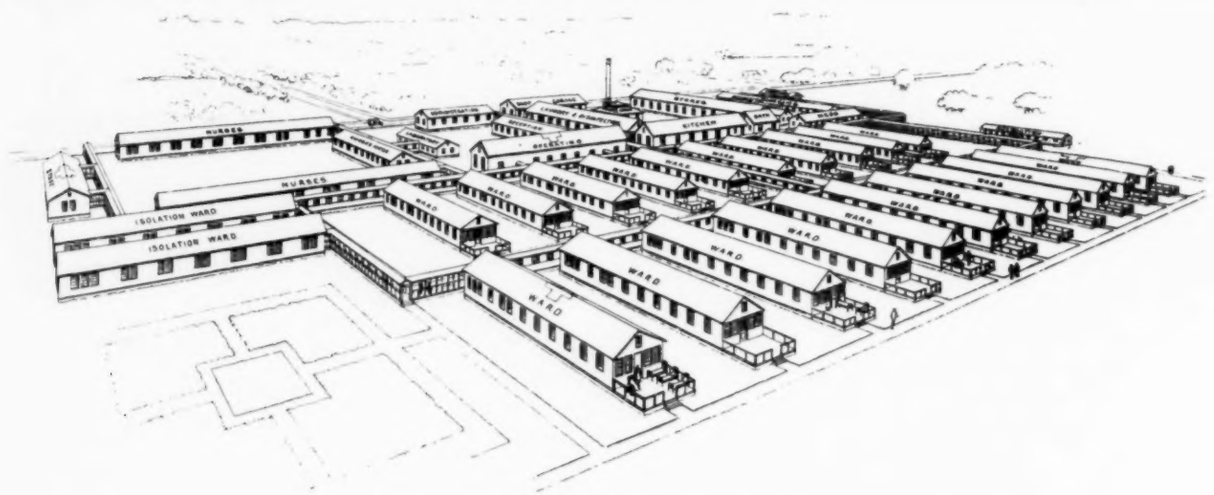
That hospital in which the well-being or comfort of patients is sacrificed or subordinated in the smallest degree to a mistaken zeal for order deserves to be marked with a large round zero on the score of neatness.

COLUMBIA WAR HOSPITAL

Completely Portable Type—Ward Buildings of Wood With Double Wall—A Complete Building May Be Erected by Six or Eight Men in Two Days

By FRANCIS CARTER WOOD, M. D., Columbia University, New York

THE emergencies incident upon the entry of the United States into the war have, among other things, made very evident the necessity for the design and erection of a large number of hospitals to care for the normal percentage of sick among the enlisted men in camps and also for the wounded who will be returned from France. Two types of construction have been considered: (1) a completely portable form, the so-called standard base hospital type, which can follow the movements of the troops; and (2) a type to be erected in connection with cantonments and other permanent stations, which need not, therefore, be portable. The latter has been the subject of much discussion in army circles, and various plans have been evolved. There is nothing especially novel about these non-portable buildings, however, as they follow the ordinary lines of hospital construc-


NURSES
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tion, except that they occasionally employ rather unusual makeshifts which would not be used in more permanent structures, such as the lining of rooms with building paper to insure their being kept at a comfortable temperature even during winter weather.

The Columbia War Hospital, which is the subject of this paper, is of the completely portable or base hospital type and accommodates 500 patients. The design is a composite one and is the result of a study of the methods employed on the English and French fronts. It combines the portability of the old tent hospital with many conveniences which the latter can never possess in the way of ventilation, freedom from dampness, and ability to keep the wards at a reasonable temperature even during extreme cold weather.

Fig. 2. Putting on roof of ward building, Columbia War Hospital.

The first plan, as shown by the architect's sketch (Fig. 1), called for buildings to occupy a space considerably over ten acres in extent. In order to adapt the buildings to the slightly irregular piece of land available because owned by Columbia University, some minor changes in the original arrangement were made, though the number of buildings, thirty-eight in all, remained the same.

The situation of the roadway on the south side of the property, for instance, necessitated the removal of the reception and administration buildings to a court to the south. This reversed the position of the wards so that if all the porches on the wards were made to face the south, as is the generally accepted rule in hospital construction, a very long series of corridors for the transport of food from the kitchen would be necessary. One-half the wards were, therefore, turned around so as to make the porches face the north, though they still have a complete east-and-west exposure to sunlight and receive some sun from the south owing to the low roofs of the ward buildings.

The other half of the series of wards has a southern exposure for the porches. By this arrangement the entry of food wagons directly along a single central corridor from the central kitchen to the diet kitchens in the wards was made possible. The operating room was placed on the extreme eastern end of the plot, so that it would have a central position if the hospital is extended to 1,000 or 1,500 beds. The garage was placed across the street so that the patients and staff would not be disturbed by the clatter of motors while these were being repaired or tested.

All patients and supplies will be received in a central court, about which are grouped the reception building, where patients are examined before admission, the building containing the offices and record rooms, and the stores and kitchen.

The reception building contains complete equipment for the disinfection of the patient's clothes on admission, facilities for removing vermin, shower baths, etc., and a series of small examining rooms for individual patients.

The general size of the buildings can be approximately estimated from the plan. The dimensions of the ward buildings are 24 by 99 feet, with, in addition, an uncovered porch at the end measuring 24 by 16 feet. The isolation wards are slightly longer, 18 by 138 feet. The height of the wards at the eaves is about 8 feet; at the peak of the roof, about 15 feet. Ventilators will

Fig. 3. Inside partly finished ward, Columbia War Hospital.

be placed in the roofs of the ward buildings if, after trial, it is found to be necessary. So far the wards have proved to be exceedingly comfortable. The operating room measures about 24 by 150 feet; the kitchen, 28 by 120 feet; the laundry, 28 by 174 feet; the stores, 28 by 176 feet; and the garage, 20 by 116 feet.

The operating room, kitchen, laundry, and garage are built of thin sheet steel, which comes in sections and is fastened together with a simple arrangement of a yoke and key made so that it

can be driven in with a hammer. The steel sheets are thin enough to permit bending by hammering if they have been deformed during transport. Each section is light enough to be handled by two men, the trusses require five or six. The foundations are concrete posts. The steel buildings were supplied by the Trussed Concrete Steel Company.

The remaining buildings are of wood and were furnished by the Illinois Lumber Company. It was anticipated that the steel buildings would be exceedingly hot, so arrangement was made to have cowls in the roof; these turn with the wind

Fig. 4. Row of completed wards and kitchen building, Columbia War Hospital.

on ball bearings, and as a system of ventilation have proved to be quite satisfactory; even in the hottest weather the buildings are comparatively cool, while before the installation of these ventilators they were often unbearably hot.

The wards and the other buildings are made of a double thickness of wood separated by an air space. The sections are supplied complete with the windows in place. The wooden buildings are set upon short posts, about 4 feet high (Fig. 2), which come as a part of the structure, though, of course, in case of emergency, the buildings can be placed directly upon the ground. On these posts are set the girders (Fig. 3). The joists can be seen lying within the rectangular framework. When in place these are held by bolts and nuts, the holes being already bored in the joists when they are received. Over these goes a steel yoke; and the notched floor beams are hung on these yokes. The floor, which also comes in sections, is then laid on and the erection of the walls is begun, the first few pieces being braced by nailing to them a piece of scantling which extends over to a near-by post. As soon as the end of one of the buildings is constructed, the roof girder is put in place and bolted on. This portion of the building will then stand by itself, and the further construction can be rapidly carried out.

Six or eight men can erect one of these buildings in two days, a larger number in correspondingly shorter time.

The protection of the roof is accomplished by laying over the wooden portion a layer of waterproof flexible composition roofing which can be fastened down with nails or can be held down by a board nailed to the roofing at each end. A series of rolls of the roofing material are shown in Fig. 2.

The general waterproof character of the buildings has been sufficiently tested, as several of them have been erected since June 1 and have stood through a number of heavy rain and wind storms without any discomfort to the inmates.

Each ward is planned to accommodate twenty-five patients and contains toilets and baths for the patients, a diet kitchen for the serving of meals and preparation of special foods, and a quiet room in which moribund or difficult individuals can be placed.

The drainage, in the case of this particular group of buildings, is accomplished by piping directly connected with the New York City sewers. If the buildings were to be erected at a distance from a city, of course, a special sewage system would have to be constructed. Owing to the availability of electric current, also, the buildings have been wired for electricity; some different scheme

Fig. 5. Kitchen of Columbia War Hospital.

would be necessary if current could not be obtained.

The laundry machinery is supplied with direct-drive motors, and the steam used is furnished from a small auxiliary portable boiler. If electricity were not available, a separate power plant would have to be installed to furnish the necessary current. In France and Belgium the base hospitals have usually been placed where current can be obtained.

The method of heating the buildings has not been finally decided upon. The army has been in

the habit of using small stoves which can be fed with wood and are very satisfactory. As it is not intended that the plant under consideration shall be moved during the period of the war, it is probable that steam heat will be laid on in the buildings, with the exception of the kitchen and laundry, which are sufficiently heated by the ranges, hot water heaters, and steam pipes.

A portable ice machine which can be towed by a traction engine furnishes sufficient ice for 500 patients and the necessary personnel, and supplies cooling coils to three portable ice-boxes in the kitchen.

The cost of one of the wooden ward buildings, including the painting, plumbing, electric wiring, and terracing, is approximately $3,300; the cost of the operating room building, which is of steel ceiled with wood, and including the electric light, plumbing, concrete floor, painting, etc., is approximately $8,000, with an additional $400 for metal skylights and ventilators.

The total cost of the plant for 500 patients, with water, light, and gas connections, painting, fencing, and grading, will not exceed $250,000. The equipment will cost about $20,000 more. A steam heating plant and the necessary plumbing and extras will possibly bring the total to something under $300,000, thus producing a hospital at a cost of about $600 per bed.

The life of the wooden buildings is estimated to be at least five years in good condition. The removal of the buildings to another site has been computed to result in a loss of about 3 percent, this loss being chiefly allotted to the waterproof composition roofing and the concrete floors which have been placed in the operating room, the kitchen, laundry, and garage, in compliance with the rules of the fire underwriters controlling structures within the limits of New York City. In the field, wooden floors would be used instead. The steel buildings have, if properly cared for, an indefinite life.

The time required for the erection of the buildings, if sufficient labor is available and all the material can be delivered at once, would probably not be over three weeks, and with a very large force of trained mechanics could be reduced to less.

While the general plan of the buildings has been approved by the War Department for its base hospitals, it is possible that the experience gained in handling and working in these structures will be useful, also, from a civilian point of view as showing what can be accomplished in the way of rapid erection of hospital buildings in case of an extensive epidemic or in connection with the undertaking of large engineering enterprises, such as the building of canals, dams, or similar public works away from large centers of population.

THE TUBERCULOSIS CAMPAIGN IN NEW YORK STATE AND ELSEWHERE

Importance of the Local Hospital—Progress Made by the State of New York in Providing Hospital Facilities —Need for Larger Appropriation

In an address delivered before the convention of the New York Federation of Women's Clubs at Rochester, Dr. Otto R. Eichel, of the New York Department of Health, emphasizes the tuberculosis hospital as the most important preventive agency. The local or district hospital plan, which was the great constructive measure agreed upon at the great international congress of 1908, he regards as the best means for combating the disease. Of the campaign in New York State he says:

"New York City has set a wonderful example in hospital facilities. Outside of New York there are 57 counties in the state—5 are too small to need hospitals. Of the remaining 52 at the present time 33 have some form of institution established or assured; and this magnificent progress has been made almost entirely in the past eight years—since the congress of 1908. But this still leaves 19 counties which today have no hospital beds whatever for this disease. A year ago 5 counties voted a referendum to establish county hospitals, and this election 3 more voted likewise. Such a proposition has never failed when submitted to the people for decision by ballot. [Since this was written, two counties have decided to submit the hospital question to a referendum vote at the next election.] What does it mean to have 33 counties out of 57 with hospitals in operation or assured? We have set before us the task of providing a bed for each of the 5,400 annual tuberculosis deaths outside of New York City. Both experience and practice have shown this to be the best measure of a community's needs—its death-rate. We have in operation or assured today beds for 2,685—or 49 percent of the deaths—just one-half in eight years. And the counties which have made this brilliant progress contain 82 percent of the upstate population! We still have before us, therefore, the task of obtaining hospitals in 19 counties. These contain only 18 percent of the upstate population, but 51 percent of the annual deaths. If our past rate of development is maintained, we should have a hospital in operation in each of these 19 counties in just seven years more."

Dr. Eichel also urges the establishment of a tuberculosis division in the state department of health. Such a division was required by law in 1913, but no appropriations were made for it. The department was, however, granted $7,000 for tuberculosis work by the last legislature. In contrast with this are appropriations made by California this year—$75,000 for tuberculosis alone, in addition to state subsidies for county hospitals. Pennsylvania has over $1,300,000 annually and maintains sanatoriums and dispensaries throughout the state. Annual appropriations varying from $6,000 to $16,000 have been granted by Ohio, Kentucky, Virginia, Maryland, and other states. Michigan has voted its health department $100,000 for a two-year investigation and educational campaign. Minnesota and Missouri appropriate money for county hospitals. Virginia and Alabama have created tuberculosis commissions and the latter recognizes the principle of county hospitals. "But of all these mentioned," comments Dr. Eichel, "New York is the largest and richest, has the greatest tuberculosis problem, and the smallest appropriation, and this in spite of the fact that aggressive prevention would effect a direct saving of the $65,000,000 annual economic loss which the disease causes in this state."

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The War

There has been a general cry, especially in the daily papers, that the United States was unprepared for war. A careful and thoughtful consideration of just what has been accomplished in two or three months since war was declared, however, ought to impress one with the fact that if the country as a whole was unprepared for war, at least those whose business it is to be ready at all times for any eventualities were as well prepared as was possible, considering our form of government and the fact that Congress has held all the initiative.

The War Department, the Navy Department, and the Red Cross have been ready weeks ahead of Congress and have had to hold back certain of their final decisions and activities until the consent of Congress had been given and until the funds had been appropriated for the execution of the projects. It seems to us that it is a most favorable augury that the initiative has been taken by our trained permanent war organizations so quickly, with such assurance and calm decision, and the country is certainly to be congratulated that every move that has been made by the trained people in whom we have reposed confidence through all the years has been decisive, without any hesitation whatever, and has turned out well.

It seems to us that a country that could land as many men across three thousand miles of sea and two thousand miles of land and get them to the seat of war within thirty days from the time that permission was given for them to be sent could not be called unprepared. Indeed, the only unpreparedness that has developed in connection with this war has been on the part of the public and Congress, and, after all, neither Congress nor the public has to fight this war. It is the man in the uniform.

Of course, it is absolutely necessary for the country to be in hearty accord and in support of the purposes and plans of the war. This has evidently been the case, because, with a few notorious exceptions, Congress has been with the President and the country has been with the President, and Congress has done the obvious thing in giving to the President authority that must always go with responsibility. And now the country may fairly well feel that this war has to be waged by the Commander-in-Chief of the Army and Navy, who has all the necessary authority from Congress to do what he thinks ought to be done—and despite political inclinations and prejudices, what a wonderful feeling of satisfaction there is in every American mind that we have a commander-in-chief of the caliber and character of Woodrow Wilson!

One might dwell upon the wonderful rise of the American people to the necessities of this tragic and critical hour, the splendor with which every individual has stood up with an offer to do his or her part; but the sphere of each of us is so limited and the field of usefulness so small that we in the hospital field need only "stick to our knitting" to feel the same thrill of pride that every other element of our people must feel. Almost without exception, the hospitals of the country have risen high and have shown a breadth of patriotism and purpose and an intelligence that we had not felt or known about until now; the medical profession, which is inseparable from our hospital field, has answered the call by tens of thousands and only needs to be specifically designated to respond to almost the full extent of the professional strength. Our nurses are headed toward the battle fronts in France and Belgium, literally by thousands; indeed, American nurses have set the pace for the allied hospital agencies for more than two years and have won the highest honors for efficiency and devotion.

For years we have been weltering in wealth and ease, until at the time the great European war broke out there were doubts in many minds whether America had not gone back to a place

in history beside ancient Rome and Greece before their downfall. But the last few months and the historic sequence of events as they have affected us and as we have affected them make one glad again and hold up his head with pride to be an American.

The American Hospital Association Meeting in Cleveland

The American Hospital Association is to meet in Cleveland on September 11-14. There was a doubt in the minds of some of the leaders in the association for some time whether, on account of the war, the association meeting should not be abandoned this year, but deliberation has emphasized a greater necessity than ever before for the association to meet. Indeed, the Cleveland meeting must be made one of the largest, if not the largest, that the association has ever had, primarily for the reason that we are at war and that American hospitals are to be asked to do their part in a most specific and energetic way. It would be the height of folly for a hospital meeting to take place this year without practically all its activities being devoted to a consideration of the thought and purpose that is uppermost in the mind of every American citizen, namely, the war.

Just what has the American hospital to do with the war, it may be asked. Very much indeed. Before this next year is over there will be an organized army of American soldiers either on the battle fields of Europe or in training in this country for that purpose. An army of a million men will require a medical personnel of more than ten thousand doctors. If we have two million soldiers, twenty thousand American doctors will have been called to active service. By a wise provision of the War Department, these military surgeons must be taken from the young and the best of our medical men. Nearly all of this class of men are working in our civilian hospitals at the present time, or at least were until they were called into active duty. Nearly ten thousand of these men have been already commissioned and are only awaiting the order to don their uniforms and go to their stations.

Does this mean nothing to the hospitals of the country? It means very much, because every hospital from which some medical men are withdrawn will have to readjust its civilian activities to fill their places.

Moreover, the question of food and medical and surgical supplies is a most vital one, and the government is undertaking to mobilize hospital supplies of every sort and to place them under conditions that will embarrass the civilian hospitals as little as possible, and at the same time meet the obvious demands of the war.

Even before the war involved this country, prices for everything had gone sky-high and civilian hospitals were hard pressed to meet their obligations.

Already very much has been done by the Council of National Defense and the various government services to standardize hospital supplies. Nearly all the manufacturers of staple hospital commodities have been in personal conference with the medical board of the Council of National Defense, and some definite agreements have been entered into by which manufacturers have agreed to stop the production of those things that are not fundamentally essential to the care of the sick and to make only those things that are going to be in constant demand. Surgical instruments, gauzes, cottons, rubber goods, hospital furniture, sterilizers, and pharmaceuticals have been under this careful survey.

As a result of this consideration and careful study of these agreements, provisions are pretty well completed under which the vast quantities of supplies can be furnished for our own armies in the field, for the armies of the allies and for our own civilian hospitals.

But energetic cooperation and a thorough understanding of what has been done is absolutely necessary on the part of hospital administrators and boards of trustees.

At the Cleveland meeting a symposium has been arranged under the general topic of "Mobilization of American Hospitals for War." This symposium is expected to occupy most of two days, if not more than half the time at the disposition of the convention. The surgeon-general of the army, the surgeon-general of the navy, the surgeon-general of the public health service, the director-general of the American Red Cross, and Major Franklin H. Martin, chairman of the medical section, advisory board Council of National Defense, will participate either personally or by accredited representatives in this symposium.

This year it is not a question of the desirability or the advisability of hospital administrators or representatives of hospitals to be delegated by their institutions to attend the Cleveland meeting; it is an absolute necessity. Those hospitals that are not represented at the Cleveland meeting will lose their opportunity to participate in collective and coordinated action that will assure them all the advantages of cooperation and governmental support; they will be at the mercy of their isolated

and individual resources for obtaining what they need for the security of their medical and nursing staffs, and these disadvantages will cost them untold annoyance and vast sums of money.

Navy Hospital Plans

We are to have special opportunities, in the preparations for the war, to learn what the experts in the various government services know and think about hospital construction, equipment, and management. It is necessary for the men in these services to lay the greatest stress on workableness in their designing and planning, because they must think in terms of immense numbers of patients, and must plan so that the very highest order of service can be given to the greatest possible number at the lowest possible cost—which means also the lowest cost in administration.

It will stand the hospital people in good stead, therefore, to study the plans of General Braisted's emergency hospitals, published elsewhere in this issue. General Braisted, if he were not the head of the medical and surgical bureau of our great "first line of defense," might have had time to develop a very distinct leadership in our hospital field. As it is, it may be assumed that he has given personal direction to all war plans in the various branches of the naval hospital service.

In other pages also is an article by Passed Assistant Surgeon W. E. Eaton, of the Navy, on the transformation and equipment of what might be called ambulance yachts. Great numbers of these small vessels have been offered to the navy by private owners, and many of them are now in use along the coast in the work of transferring the sick from war ships to the hospital ships and to the shore—this work by way of training and preparation for a time when they will be urgently needed during and after sea battles.

Whatever may be said of unpreparedness in other services of the government, the medical and hospital bureau of the navy is ready for the war; and the plans by which this readiness was achieved are worthy of the very careful study of all Americans, and especially of the hospital people, whose work always lies along parallel channels, even if not on so great a scale.

Americanizing English Hospitals

The Metropolitan Asylums Board of London is a public body charged chiefly with the furnishing of hospital accommodation for infectious diseases. The institutions under the control of the Board employ a staff of over 4,000 persons.

War conditions rendered economy of food important and the Food Controller's regulations combined with this consideration to produce an inquiry into the feeding of this large staff. It was found that there were great variations in the per capita cost of feeding in different institutions and, independently of the cost, there was an undue variation in the quality of the food.

The first step taken by the Board was the establishment of a common menu to be used in all its institutions for four weeks at a time. Instructions were given and assistance afforded in the application of this menu. After the first period of four weeks, a return showing the consumption of the different articles of diet per head per day was circulated to all the hospitals, with a comment on the discrepancies disclosed. This practice has now become a monthly one, with the result that the more wasteful institutions are gradually approaching the standard of those more economically managed. Throughout, the quality of the food has been notably improved. This experiment resulted in the following savings of foodstuff during sixteen weeks, as compared with the quantities that would have been issued under the old dietary: Milk, 3,726 gallons; eggs, 43,112; tea, ¾ ton; sugar, 4½ tons; flour, 1¾ tons; and meat, 20½ tons.

The estimated total saving in money is $20,650. This saving was made notwithstanding the steady increase of prices throughout this period. Furthermore, it was a progressive saving, rising from an annual rate for the first month of less than $35,000 to an annual rate of about $100,000 in the fourth month.

The results of this experiment, while not directly applicable to conditions prevailing in this country, emphasize the efficiency, the economy, and the ease of working which result from standardization.

"But why the title to this note, since it is notorious that American hospitals are not standardized?" we hear some readers ask. Just so, but nevertheless, standardization of nearly everything else is an eminently American institution. In hammering at the need for standardization of our hospitals, we are merely urging the Americanization of American hospitals.

The Call for More Trained Nurses

The demand for trained nurses has been steadily on the increase for some years. This has been due to changes qualitative and quantitative. Qualitatively, new fields of application have developed, especially in social welfare work, while quantitatively, there has been great expansion in

every branch of the trained nurse's activities. The result has been a decided shortage in the supply, a shortage which, under the demand of war service, bids fair to become a famine.

While the United States Army is placed in an enviable position, second to none, by the foresight with which the arrangements of the Red Cross have been made, the drafting of the nurses necessarily involves a serious drain upon civil institutions. During the war period, there will inevitably be an immense demand for trained nurses. After the war, there is every reason to believe that social welfare work will receive a great impetus.

It is urgent, therefore, that immediate steps be taken to fill the gaps. It is not necessary, in this place, to labor the argument that the first-aid courses are of no avail for this purpose. What is needed is that college and high-school graduates should be encouraged to enter training schools immediately, and to take up nursing as a career. The propaganda must be intensive and it must be pushed in two directions. The personnel is to be recruited by campaigns in school and college and among graduates, while the training must be provided by the hospitals. As to the latter, much commendable work has been done, with the support of the National Emergency Committee on Nursing, in New York City, notably by the Mayor's Committee of Women on National Defense and by the Committee on Women's War Work of Columbia University. A number of the most prominent training schools in the country are cooperating in this effort.

Obviously, hospitals that expect to avail themselves of a propaganda of this sort and take advantage of this proposed nation-wide "drive" for pupil nurses, will not lose sight of the necessity to find proper housing and to make a congenial atmosphere for the young women secured.

Special War Number

This month's issue of THE MODERN HOSPITAL was intended to be specially devoted to eye clinics and hospitals and the blind and various auxiliary topics. But the whole country seemed to be clamoring for war news, and we were compelled by necessity and by a great clientele of anxious readers to change the subject of our special number and to devote this issue to the war and its many phases. We think we are giving some useful, timely, and exclusive information as to what is being done and how it is being done, and to that end we feel that those who are specially interested in the welfare of the blind and in eye clinics and out-patient departments will be lenient and forgiving. The symposium on the blind and eye clinics will appear in an early number.

We are publishing this month a great mass of interesting information about preparations for the over-seas war. We have some interesting matter from the Red Cross concerning the various medical and hospital units. We have two papers from the Navy Department, one from Surgeon-General Braisted, outlining briefly a plan for emergency hospitals, a great many of which have been already built, and a paper by Dr. Eaton on the transformation of pleasure yachts and similar small vessels as ambulance boats. We have an article about activities in the War Department, and various special items that ought to give us a pretty clear insight into what is being done and how it is being done, and who is doing it.

A very important paper on the Rockefeller Institute Base Hospital has been prepared especially for this number by Mr. Charles Butler, who, since writing it, has been detailed by our War Department to the French Ministry of War as an expert on hospital construction and who will go to the western front to supervise hospitals for the American army.

Another important and timely paper is that by Dr. Francis Carter Wood, of Columbia University, on Columbia War Hospital, a hospital of the standard base hospital (completely portable) type. As Dr. Wood suggests, it is possible that the experience gained in handling and working in these structures will be useful not only in the war, but also afterward in times of epidemics, etc.

We wish to call attention also to an article on the valuable work in war orthopedics of an American woman, Miss Grace Gassette, who has put the knowledge of anatomy gained in her art studies to new and surprising uses. As indicated in this article, the greatest need of Miss Gassette's committee is for funds. Checks to aid in this most laudable work may be made payable to E. Norman Scott, Administrateur délégué, 17 rue Boissonade, Paris, or American Relief Clearing House, 5 rue Francois—I, Paris, and may be sent direct to either of these addresses. They should be designated "as for the Franco-American Corrective Surgical Appliance Committee."

Hospital Buying

On another page of this issue will be found a short paper on hospital buying, by Mr. M. L. Reid, of San Francisco. We must commend this paper to our readers; it is very much worth while on a highly important subject, and will be of great interest to a good many administrators.

THE FRENCH MILITARY HOSPITAL SYSTEM

Route Taken With the Wounded—Shelter for the Wounded, Advanced Dressing Station, Field Hospitals and Base Hospitals—Type of Hospital Devised as a Model

All France, says Mr. Charles Butler in a recent article, is divided into two parts, the army zone—and the rest. The zone is a strip, on the average 30 miles wide parallel to the front, into which one penetrates only by the permission of the grand quartier général. In this zone lie the front-line hospitals, ambulances, dressing stations, etc.

The grouping of these services is about as follows: In the front-line trench is what is known as the *abri du blesse* (shelter for the wounded), a hole in the side of the trench, where the wounded man is put to get him as much as possible out of danger till he can be moved to the advanced dressing stations (Fig. 1), which lie 50 yards or so behind the front-line trenches. This dressing station, or *poste de secours*, is presided over by an assistant surgeon, probably a medical student when war began. From the dressing station, which is always under ground and contains perhaps a dozen bunks, the wounded man is transported, as soon as the firing slackens sufficiently, through the *boyau*, or communication trench (*boyau* means bowel, and the convolutions of the communication trench for the purpose of localizing the effect of bursting shells fully justify the name), back to the battalion dressing station, perhaps a mile away.

It can be imagined just how painful is the trip through this mile of winding trench. Various types of stretchers are used, perhaps the most satisfactory being the hammock stretcher hung from a pole carried on the shoulders of the bearers and more easily maneuvered in the winding trench than the ordinary side-pole stretcher. There are also chair stretchers for seated cases, etc., but any way you take it, it is a hard trip for a wounded man.

At the battalion dressing station is a full-fledged surgeon and there are facilities for operating—as always, under ground. This dressing station is generally accessible for motor ambulances, at least at night.

The French medical corps has devised a most ingenious unit for use in connection with the ambulances—what is known as the *ambulance chirurgicale automobile*. This consists of a unit construction portable building, comprising a waiting room about 10 by 16, a sterilizing room about the same size, and an operating room about 20 by 16, all of which can be packed on two motor trucks. Another truck contains a very complete sterilizing outfit, a fourth the x-ray equipment with electric generator, while the fifth serves for general supplies and transport of personnel.

These buildings are now being erected with double walls and steam heat, and can be quickly transported to the point on the front where they are most needed.

The field hospitals, in which men can be cared for who need a few days' treatment before being sent on to the rear, lie a little further back.

These are a cross between the ambulances and the base hospitals, and are either in existing buildings, in tents, or in portable house barrack buildings, but more and more in barracks and with more and more of the conveniences and comforts of the base hospital.

Back of the field hospitals lie the great centers, such as Revigny and Bar le Duc back of Verdun, Belfort in Alsace, Bray and Amiens in the Somme, where the wounded are counted by thousands instead of by hundreds and where the final sorting out is done.

At Bray the group contains 3,500 beds, divided into a hospital of 1,000 beds for the seriously wounded who are not transportable, a *depot d'eclopes* of 1,000 beds for the slightly wounded and slightly ill, and an evacuation hospital of 1,500 beds for those who are to continue to the rear on hospital trains.

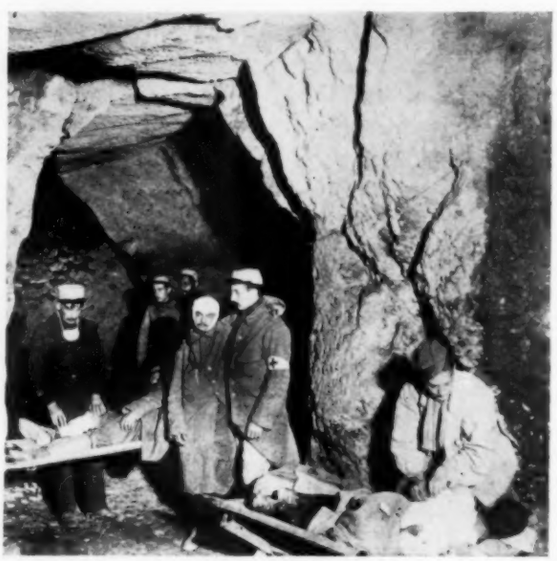
The hospital proper is of the unit construction, portable-house type, equipped for giving first-class surgical treatment.

Mr. Butler was asked to design a hospital of this type to be erected at Vincennes, just outside of the gates of Paris, as a model (Fig. 2).

The plan which he prepared for Dr. Carrel was based on his theory that it should be possible, by isolating a hospital, to place it much nearer the front than had been done in the past—in other words, to build a hospital equipped to give first-class treatment within five miles or so of the lines. This plan, though never executed, has served as a basis for the plans of many other hospitals.

The special requirements of war hospital planning, he says, are:

1. Reduction of road building to minimum.
2. Complete intercommunication between buildings by wheeled cars, patients, food, linen and supplies of all sorts being carried on wheels and all buildings connected by galleries uninterrupted by steps.
3. Grouping of administration, technical and general services for easy communication and supervision.
4. Grouping of wards for easy service and with proper north-south orientation, and south end unobstructed.
5. Grouping of dwellings for staff, nurses and orderlies for convenience and supervision and with sufficient separation from patients' quarters.



Photograph from Underwood & Underwood, New York.

Fig. 1. An advanced dressing station on the Aisne front in which the wounded receive emergency treatment before being taken to the field hospital. These dressing stations are always under ground; this one is scooped out of the solid rock.

The plan for the permanent military hospital at Issy-les-Moulineaux (Fig. 3), in its general scheme of arrangement, follows the line of war hospitals, but is executed in permanent materials. The general plan for a typical base hospital shows the result of the work of Mr. Butler's committee in France as adapted to American requirements (Fig. 4).

The details of the plans follow in general the ordinary practice, with the necessary modifications to fit military

needs. The reception building in its present form is, however, a very definite product of the war. As it must be assumed that every wounded man is filthy, even though not necessarily vermin-infested, it is essential that he be thoroughly cleaned before being admitted to the ward. In the center is the receiving room into which the ambulances discharge their loads. In this room the surgeon on duty makes a hasty examination, picking out those most needing prompt transport to the wards. They are then taken in order into the wash-up room, where their pedigrees are taken, their valuables checked and where, after receiving their ward assignments, they are cleaned in the table baths, put in clean hospital clothes and wheeled away to bed, while their soiled clothes go to the disinfecting plant. After being washed, disinfected, and repaired, their effects return to the building for storage, where their records and valuables are also kept.

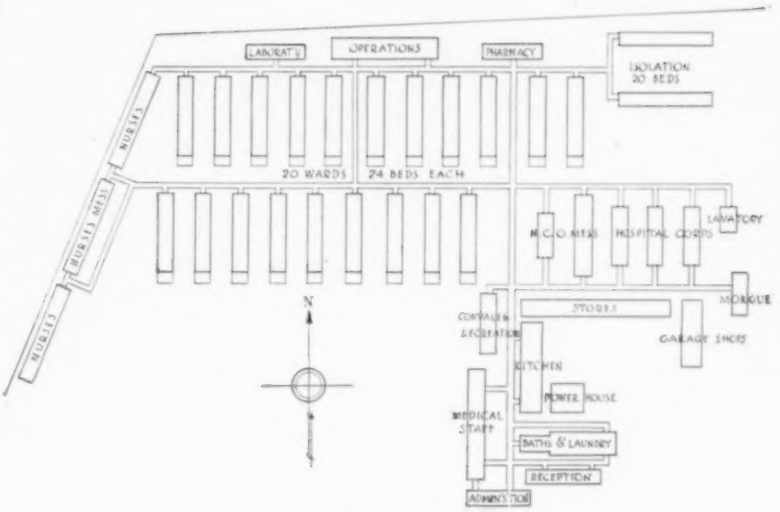


Fig. 2. Plan for 500-bed base hospital, Vincennes, Paris, France.

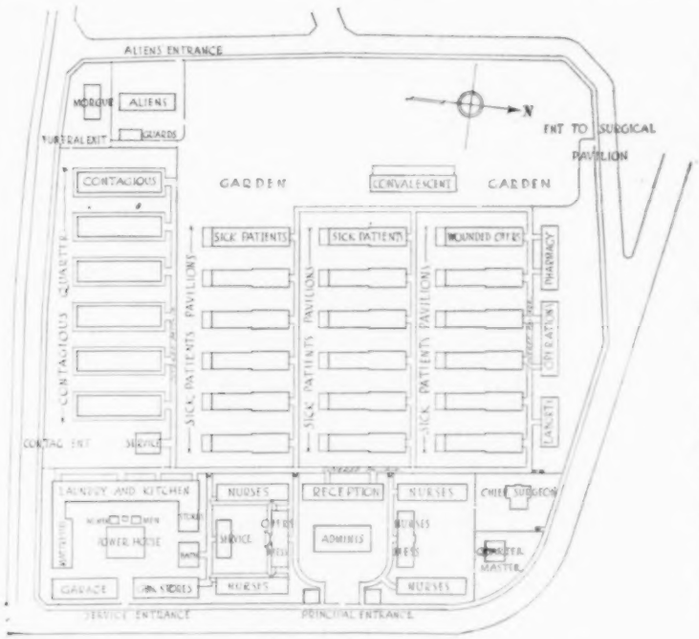


Fig. 3. Permanent military hospital at Issy les Moulineaux, France.

When the wounded man is finally convalescent and ready to be discharged, he comes back to this building, turns in his check and receives his uniform and personal possessions, and after signing off is discharged.

The advantage of concentrating in one building the receiving and discharging of patients, together with the filing of their records and the storage of their effects, is obvious.

The operating pavilion is naturally of especial interest in a war hospital. There are two entrances, one being reserved for patients, while the other permits the orderlies to reach the dressing preparation room and secure their provision of sterilized dressings for the wards without penetrating into the rest of the building.

In view of the fact that much of the linen and clothing is contaminated, the laundry has two receiving rooms, one for ordinary soiled linen and one for linen, clothing, mattresses, etc., requiring sterilization; these pass through either the sterilizing washer or the steam and formaldehyde sterilizer into the laundry proper, where they join the other linen and are thenceforth treated no differently from the rest.

The ward buildings, containing each twenty-four beds in the open ward and one in an isolation room, show the consistent development of the war hospital towards the standards of civil practice.

Base hospitals are being planned more and more with sewage disposal systems, and in the case in point, complete service is provided, with toilets, bedpan and housemaids' sinks, lavatories, kitchen sinks, etc. As relatively few wounded can be bathed in the ordinary tub, there are no bath tubs in the ward buildings, but instead a small central bath house is provided, thus materially reducing the expense.

An isolation room is provided in each ward unit, also a surgical dressing room, diet kitchen and nurses' office and linen closet.

Following the custom of civil hospitals, the wards are oriented north and south, and the south end is

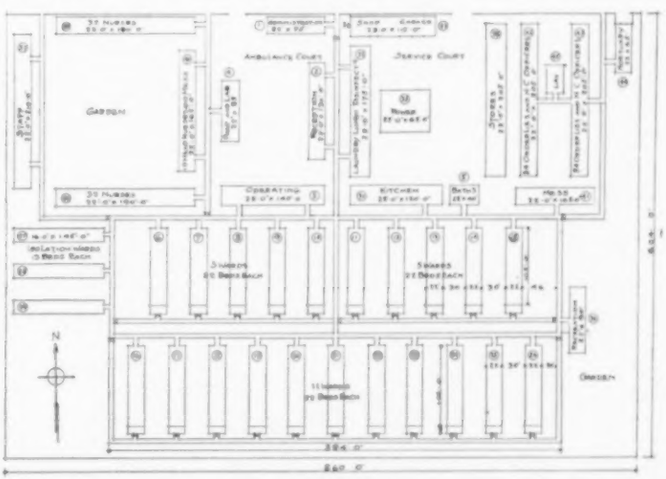


Fig. 4. General plan for base hospital adapted to American conditions. Butler & Rodman, Architects.

composed entirely of windows so as to permit the greatest possible amount of sunlight to enter. At this south end is placed, on a level with the ward, a terrace, onto which the beds may be wheeled in clear weather, for experience has shown that fresh air and sunlight are as good for wounded as for tuberculous patients. The beds must therefore be provided with large rubber-tired casters, to permit easy rolling.

A large recreation building is provided, which may also serve as convalescent mess. It must be borne in mind that in the average war hospital there are many men who, except for a local wound, are quite well and active, and who would be difficult to handle if provision were not made for their distraction in a building specially set apart for this work, usually divided into reading room and room for games.

The French authorities have solved the problem of drinking by providing a canteen, at which each convalescent patient may buy drinks to the extent of one drink per day, a simple method when there is but one source of supply. No treating is allowed.

Almost as important as the planning of a base or field hospital is the choice of material and type of construction, and here we have much to learn from the experience of our allies. On the British and French fronts, portable house unit type construction is employed almost to the exclusion of other types, the theory being that these buildings will pretty certainly be moved at some stage of their career—there is also the thought that the unit construction building may be of service after the war for temporary use in the regions so completely devastated in France and Belgium. There is no idea of using portable-house construction so that hospitals may be taken down and reerected in three or four hours, as some manufacturers claim that these buildings can be, but it does seem advisable to use a type of building which may be transported and reerected if desired.

The English, French and Belgians have all worked out types of buildings which are far superior in their practical workableness to any of our types. This is natural, in view of the fact that these countries are erecting buildings of this type not by hundreds but by thousands, but it would be well if we could learn from their experience and avoid their mistakes.

While in general these buildings are heated by stoves, in many steam heat is being installed; some have plumbing, and all electric light.

A necessity for wooden buildings is an efficient layout of water supply to hydrants in ample number, for the buildings will burn quickly, and the German aviator is notoriously careless in the matter of distinguishing hospitals from armed camps—perhaps it is kinder to say that he is forced by the allied airman to fly so high that he cannot distinguish the red cross painted on the roofs of some of the buildings of every hospital.

Mr. Butler's paper appears in a recent number of the *Architectural Forum*.

Contract has been awarded for the first wing of the proposed Bay Ridge Hospital, Dispensary, and Training School for Nurses, Brooklyn, N. Y. This building will contain about sixty beds and a number of private rooms. The cost, including equipment, will be approximately $135,000. Since the hospital organization was formed in 1904 it has maintained a dispensary at Sixtieth Street and Seventh Avenue, where free treatment has been given to thousands of persons every year. Dr. Rollin Hills is at the head of the medical staff.

WAR STIMULATES WORK IN MASSAGE

Schools at Guy's Hospital and Other Places Flooded With Applicants—Pupils Taught Thoroughly

During the past two and a half years, in direct consequence of the war, the practice of massage has made greater progress in Great Britain than at any previous time since it was revived in this country, remarks a writer in *The Hospital*, London. Naturally, the treatment of many thousands of wounded soldiers in many cases demanded the employment of massage. Many schools of massage had to be expanded quickly to cope with the unprecedented rush of students. There are now a number of schools throughout the country, some privately owned and others in connection with voluntary hospitals, where massage is taught on scientific lines.

The school at Guy's Hospital is declared by the writer in *The Hospital* to be one of the best examples of an institutional school. The building includes a gymnasium, a massage-room and three class-rooms. About fifty students are now in training for the different examinations of the Incorporated Society of Masseuses, which are held every three months. The necessary apparatus has been specially designed for the school and made in the work department of the hospital. One department is devoted to the treatment of less serious cases, stiff joints, fractures, dislocations and the like; here students taking the elementary course are trained. In another department more complicated diseases are treated, such as cases of nervous diseases, scoliosis, rheumatism, gout, and circulation disorders. Advanced pupils and those taking the course of Swedish remedial exercise receive instruction here. Lectures on anatomy are given four days a week. Weekly lectures are given on physiology and on medical pathology, with clinical demonstrations in selected cases, and surgical pathology. The minimum length of the course is six months, and the certificate for Swedish remedial gymnastics may be gained in another six months, although a year is strongly advised.

ECONOMICAL FEATURES IN THE CONSTRUCTION OF A TEMPORARY WAR HOSPITAL

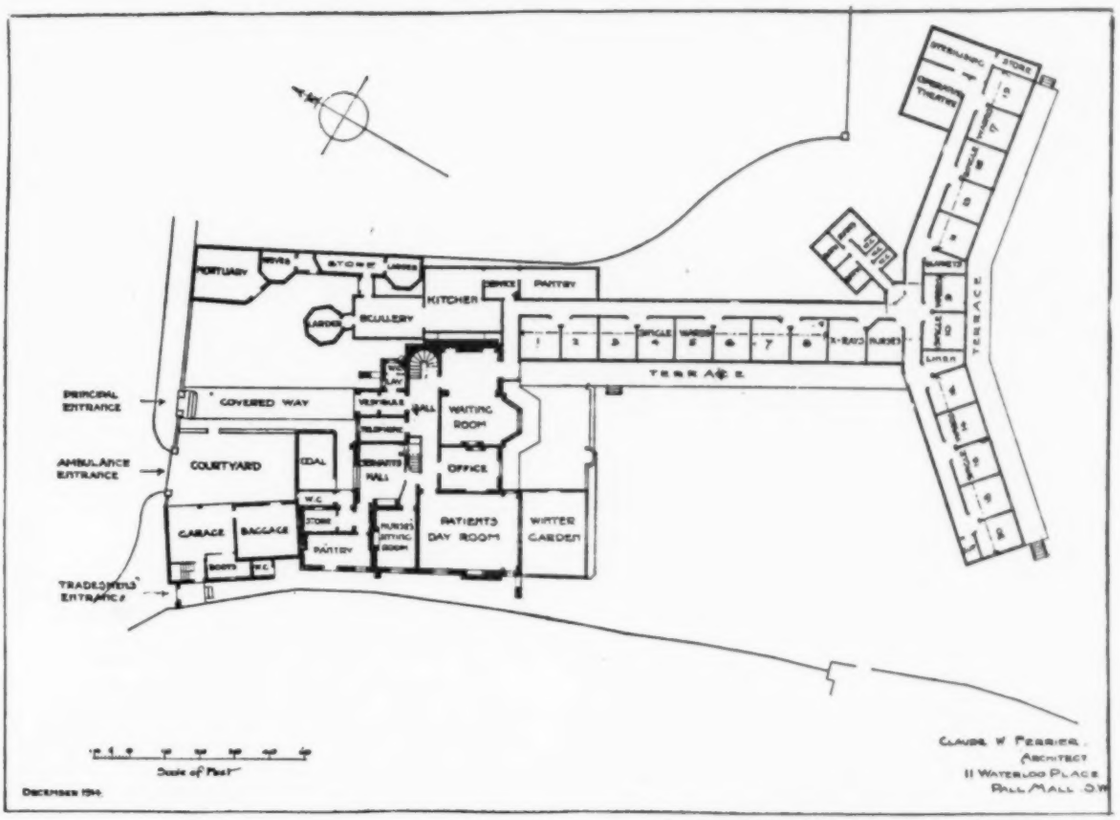
Wooden Construction With Wall Linings of Asbestos Reduce Expense—Maximum Amount of Sunshine Obtained for Each Ward

Mr. Herbert J. Paterson, honorary surgeon in charge of Queen Alexandra's Hospital for Officers, in the June *International Journal of Surgery*, describes the treatment of the wounded at Queen Alexandra's Hospital and also a number of the features of construction. The hospital is situated in grounds of about three acres, within which stands an old house which has been adapted to the use of the nursing and domestic staff. The hospital proper is a new building constructed of wood foundation with wooden piles, in the form of a modified letter "Y" connecting with the old house. The new building contains the wards, operation theater and sterilizing room, ward kitchen, x-ray room, sanitary annex, kitchens and scullery. Being intended merely for temporary use during the war, it has been constructed as economically as possible with due regard to efficiency, but without frills. Each ward measures 12 feet by 10 feet 6 inches, and is 10 feet 6 inches in height, giving 1,300 cubic feet of air space for each patient. The walls are lined with sheets of asbestos painted a light French gray. The doors are made of rough, unplaned deal, covered with brown linoleum, fixed by brass-headed

studs. Instead of a door handle a large brass dress hook is fixed on each side of the door where the door handle should be. A nurse carrying a tray can open or shut the door by placing her forearm in the hook and drawing to or pushing open the door. This ingenious idea of the architect, Mr. Ferrier, has worked excellently in practice, and effected a considerable economy in construction. The doors as constructed cost far less than painted doors would have done, and, being smooth all over, are very easily kept clean. All the wards open on to a wide veranda, access to which is gained by a French window wide enough to allow of the beds being readily wheeled outside. Thus the worst fracture cases can be moved into the open air and many of the patients sleep outside when the weather is favorable. The floor is covered with green linoleum, and the corridor floor is covered with the same material with a thick padding of dried grass underneath, which effectually deadens sound. By means of an outside green blind the room can be darkened if desired. In the summer, by fixing these outside blinds over a tight wire rope, the whole veranda can be completely covered in. The hospital was built in the shape of the letter "Y" in order that each ward should obtain the maximum amount of sun possible. If during the day there are ten hours of sunshine, each ward obtains about eight hours of it.

At the junction of the three corridors is the nurses' duty room or ward kitchen, in which the nurses sit during the quiet intervals of their working hours. It contains a small gas cooking stove, shelves and cupboards for medicines. In a felt-covered box above the ceiling of the duty room are placed the electric bells, by means of which the patient summons his nurse. From this box extend four megaphone tubes, one opening into each corridor and one into the duty room. By means of this device the bells are clearly heard in the corridors and in the duty room, but are almost inaudible in the patients' rooms. Each group of four rooms has a different-toned bell or buzzer, so that when any bell rings a nurse can tell at once whether it is one of her four patients who requires assistance. Outside each room is an indicator which flies open when the bell of that particular room is rung, so that the nurse can see, on looking down the corridor, from which of her rooms the bell has been rung. In addition to this there is an indicator in the duty room containing a number of black and white discs corresponding with each group of rooms. When a bell is rung the disc appropriate to the block of rooms oscillates for four or five minutes. Next to the duty room is the radiography room, containing a complete and modern x-ray installation. When not required for radiography purposes, the room serves also as the sisters' sitting room. Outside of the duty room and separated from the corridor by a well-ventilated lobby is the sanitary annex, containing two bath rooms, two water closets, a sink room with washing and flushing sinks. At the end of the southeast corridor are the operation theater, sterilizing room and surgical store cupboard. The theater measures 18 feet by 14 feet, and, like the wards, is lined with asbestos sheets. It has a large window facing north, and a smaller window to the west, while for night work there are four 100-candle-power electric lamps. The incoming air is warmed by being passed through two shafts containing steam radiators. Adjoining the theater is the sterilizing room, containing a large high-pressure steam sterilizer, a large caldron boiled by steam for sterilizing bowls, trays, etc., a water sterilizer, and an instrument sterilizer.

Fire alarms and fire extinguishers are fixed at various



Courtesy of the International Journal of Surgery.

Queen Alexandra's Hospital for Officers. The plan includes the old building adapted for the accommodation of the nursing and domestic staff and the new building constructed in the form of a modified "Y."

points, the positions of which are indicated in plans posted throughout the hospital. Fire drills for the staff are held regularly, and occasionally a real fire is manufactured in the grounds so as to make sure that the staff understands the working of the extinguishers.

THE FUTURE OF DISABLED SOLDIERS

Recommendations of the Conference Called by the General Medical Board of the Advisory Commission of the Council of National Defense

A conference organized from among groups of specialists having knowledge of the various problems likely to arise in the reeducation of disabled soldiers was called by the General Medical Board of the Advisory Commission of the Council of National Defense on June 22. The membership of the conference was as follows: Dr. James Bordley, Jr., Baltimore, representing ophthalmology; Dr. John Staige Davis, Baltimore, plastic surgery; Mr. C. R. Dooley, Pittsburgh, vocational education; Dr. S. I. Franz,

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Fig. 1. German armless soldier farming.

Washington, D. C., neurophysiology; Mr. F. B. Gilbreth, Providence, R. I., management engineer; Dr. R. W. Lovett, Boston, orthopedic surgery; Dr. Harris P. Mosher, Boston, otologist; Dr. T. H. Weisenburg, Philadelphia, neurology; Dr. W. A. White, Washington, psychiatry; and Dr. Edwin W. Ryerson, Chicago, orthopedic surgery. The findings and recommendations of the conference were submitted by the chairman, Dr. Franz, to the general board on June 24.

Among the recommendations of the committee were the following: that reeducational activities begin as early as possible, and that special treatment of the wounded be carried on under the direction of specialists; that reconstruction hospitals or hospital schools be established; that disabled soldiers be kept under military discipline until their physical reconstruction and reeducation is complete; and that a committee, containing representatives of the various medical, educational, and social interests concerned, including representatives of the army, the navy, the U. S. Public Health Service, and the American Red Cross, be appointed to carry out whatever plans may be adopted.

Following is an abstract of the report made by the chairman of the conference, Dr. Franz, in presenting the recommendations of the conference:

The importance of the work looking toward the rehabilitation of the maimed and crippled, using these two terms to cover the great number of different kinds of defects which have been produced, is being appreciated more and more by the Belgian, English, and French governments, and by the special physicians and others who have been compelled to deal with certain of the problems.

As the result of previous wars and of accidents in industrial pursuits, numerous crippled and maimed have been produced. Except in relatively few cases these individuals have been permitted to bear their infirmities as well as they could, and the burden of their support has fallen on their families, or on the state if they became social parasites, beggars, and the like.

In many cases these individuals have gravitated to the poorhouses or to special homes for the crippled, where they have been supported mostly in idleness. Now, however, it is being appreciated that great effort, and as concerted as is possible, must be made to limit the parasitic conditions, and to make these relatively incompetents as competent as possible. For the general welfare of the nation as a whole, for the comfort and the well-being of the individuals, a *laissez-faire* method of dealing with them cannot, and should not, be tolerated.

Statistics are not available regarding the number of those who require special treatment of the nature of reeducation. That the number is not a small one, and that in case the war continues for any length of time for our troops, the number will not be small in these United States, are evidenced by the efforts which are being made in the countries which have been at war for nearly three years to bring about a medical and public appreciation of the conditions.

Borne has divided these individuals (and has grouped with them certain others) into three general classes:

1. Those who, with immediate care, can be made almost perfect. (This group includes those who have been operated on, but who have been compelled to remain quiet and almost motionless, and who consequently have also suffered from muscular atrophies and ankyloses. Here also come the tendon retractions, the defects which are due to adherent binding cicatrices, etc. In some cases it may take as long as six months to get an individual of this class normal, or approaching his normal condition. Many of these individuals have been incapacitated in the manners mentioned because of lack of appreciation of the possibilities of the production of such defects.)

2. Those who are definitely educable, or who are readaptable to work of some kind, but who cannot return to their former occupations on account of the defects which have been produced. (The class includes all those who have lost a part of their body, such as a hand, or foot, or arm, or leg, or even one or more fingers. In these cases after surgical interventions, amputations and the like, it may take only three or four months to make the individual as nearly normal as he can be made. This includes, of course, necessary orthopedic appliances.)

3. Those who are so severely and extensively mutilated and infirm that nothing can be done for them. (Relatively few of this class will exist. Some of those now thought to be incapable of training will be found to be amenable to some kind of treatment, and this is one of the problems which will need to be considered. Those who cannot be benefited by treatment of any kind, educational or otherwise, will probably have to be kept as permanent wards in special institutions or in homes for disabled soldiers.)

It has been estimated by Amar that if proper and prompt treatment is available 80 percent of the whole number are reeducable. Some of those who are not counted in this classification will probably be dealt with in

special institutions where they may also be educated. This is true of the blind and the deaf. Of the total which he considers educable, Amar also counts that at least three-quarters may be unconditionally returned to some kind of gainful occupation and to useful social life, after they have been given the training which their conditions warrant. The remaining quarter can be instructed in certain occupations, and can carry them out for such a period of time, that will enable them to be useful although their physical conditions may make them very slow in performance and may prevent their active competition with more normal individuals. For this last class, therefore, special workshops may be required, special positions may need to be sought, and some may need special permanent care.

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Fig. 2. Disabled Russian soldiers learning to make a living by working on leather goods.

Already in France and in England much work has been done with the maimed and crippled, as has been said, and the kinds of occupations which have been undertaken by these defectives are numerous. Besides farming and horticulture, for which many have special aptitudes and previous special training and for which their infirmities are not prohibitive, the following occupations have been taught, or retaught, to certain individuals: clerical work, stenography and typewriting (with the necessary instruction in writing, drawing, geography, arithmetic, commercial law, important languages besides the native language), carpentry, wood turning and carving, tailoring, brushmaking, basketmaking, shoemaking, bookbinding, trussmaking, making orthopedic appliances, locksmithing, making chains, making mats and rugs, making playthings, working in wood and iron in making articles for ornaments, plastic arts.

It will readily be seen, therefore, that a considerable number of occupations are open to those who have been maimed or crippled, and that many more will be found in our industrial establishments there is no doubt. In the selection of an occupation there should be considered carefully the tastes and the previous aptitudes of the individuals, their past occupations, the degree of education, and great care must be exercised that caprice is not given sway, so that an individual select such an occupation that it is inconsistent with his infirmity and that, if not entirely consistent, it is so time-consuming that the cost of reeducation is out of proportion to any expected gains that the individual may make subsequently. In many cases also it is necessary to limit the kinds of occupations from which selection may be made, for certain occupations may tend to increase an existing infirmary, such as a contracture or a laxity of an articulation, which cannot be corrected.

Rochard has criticized the conduct of the reeducation work in France, because of the lackadaisical methods which were used at the beginning. The corrective apparatus was badly conceived, awkward and not effective for its purpose in many cases, and due regard was not paid to the individual. It is important that each individual be considered as an individual, and that he be treated with that kind of mechanotherapeutic measure that will be best fitted to his particular needs, and at the same time that if any corrective apparatus is needed this should be considered in relation to the occupation that the individual is to undertake as a matter of rehabilitation and also in relation to the defect which is present.

Perhaps no better general outline of what is needed can be cited than that of a commission of the Royal Society of Medicine, which has recommended as follows:

1. A service of physical treatment, consisting of hydrotherapy, electrotherapy (including roentgenotherapy), mechanical treatment, medical gymnastics, and massage, should be made available at the earliest possible date for all soldiers needing it who are disabled by war. 2. Centers of physical treatment, comprising all the foregoing methods, should be established throughout the country on an adequate scale, and wherever possible in association with general hospitals, so that other forms of special treatment and diagnosis may be readily available. 3. At such centers there should be a uniform system of measurements and records. 4. Centers of reeducation and centers of physical treatment should be closely associated.

In any consideration of the general matter of reeducation and rehabilitation one matter must be given due attention, viz., the placing of the men after the reeducation has been completed. It would be a waste of time and effort if such individuals were reeducated and they were refused by the public to take advantage of their possibilities. The organization of the work must deal with these matters, and perhaps with such other things as are being considered in France, like mutual societies, organizations, and cooperative endeavors for the general benefit of the members. And propaganda for the popularization of the work of these men, for their utilization in a variety of ways, should not be too lightly considered.

HUGE TASK OF PREPARATION FACED BY THE WAR DEPARTMENT

Five Thousand Examining Physicians to Be Needed to Examine Recruits Besides Those Needed for the Front and for Home Service—Apotheosis of Preventive Medicine at Hand—Our Trained Men Are Ready

The huge numbers in which we deal when we talk about the participation of this country in the European war are staggering and almost inconceivable. We have become rather accustomed to dealing in hundred of thousands and millions when discussing European armies, but those have been almost academic discussions and those huge figures have never meant to us the lives of our own friends and relatives, and fellow Americans. Now the discussion changes, and we are come to a point where we must think in terms of brothers and husbands and fathers, and to associate with them the horrors of the trenches, the winter colds and summer heats, infernos of fire, noxious gases, barrages of artillery metal, hundreds of miles of subterranean caverns, and thousands of miles of fighting fronts.

Our own war department has a huge job on its hands; it is proposed to organize at once an army of 687,000 men,

and this in addition to the half million or more already organized in the regular army and national guard.

To create this army of three-fourths of a million of men means that perhaps three millions will be drafted. These three millions of men will have to pass the exemption boards; then those who remain will have to be examined and recruited into the new army. It seems almost staggering to think of what this recruiting business means if it is to be done promptly and effectively. A medical officer, if he is persistent and works a long day, may be able, with the help of a clerk, to examine twenty men. If we were to plan to recruit 680,000 men in the thirty days and to examine three millions of men in order to obtain the requisite number, assuming that one doctor could examine and make out the papers for twenty men in a day, it will take five thousand doctors a month for these examinations alone, and it must be understood that the work of every one of these examiners must be passed on by at least one review board.

But the Surgeon General of our War Department is planning to do very much more than this, and to give a completer examination and make a more thorough inquiry into the physical condition of the men than would be possible, relying on these boards aggregating five thousand general practitioners in our civil profession. All of the warring nations have had terrible ravages from tuberculosis, due to the hardships of the trenches and exposure. It is proposed for our army that these ravages shall be reduced to their very minimum, and to this end orders have been given appointing large numbers of specialists in tuberculosis who are being rounded up at the various concentration camps over the country and whose duty it will be to make careful examination of the lungs of every man who has already been accepted by the general medical boards, with a view to determining whether there are any conditions that point to the likelihood of the soldier breaking down under the pressure of a hard campaign, with pulmonary or tuberculous troubles.

The soldier's life is that of the hardest-tried athlete, and our athletic regime is hard on the heart. Medical boards are instructed to make careful examination of the hearts of all candidates for admission to the army, but in addition to that the surgeon general has organized many groups of highly trained heart specialists; these men also are to be located at the concentration camps for the purpose of specialized inquiry into the heart conditions of the men who have already been accepted by the general boards.

There are eye specialists and ear and nose and throat specialists connected with every examining board in the country, and diligent and searching inquiry is made into condition of candidates in regard to the eye and ear and respiratory passages.

If all this means anything, it means that the American army, when it leaves our shores for the battle fronts of Europe, will be the most scientifically picked and carefully selected, and the finest group of young men that has ever been sent to war.

Not only are we to send our very best young men to the war, but we are to take care of them when they are there. The best architects in the world have been busy for years in an attempt to determine the best construction material and arrangement of barracks and concentration camps, taking into consideration not only the comfort of the men and the sustaining of their fighting condition, but also the prevention of every conceivable disease. There is no doubt that in the American camps in Europe preventive medicine, thanks to the lifelong specialization of the Surgeon General of the Army, will attain a higher level than preventive medicine has ever attained before, anywhere or under any circumstances.

It is almost certain that the diseases from which soldiers have died in our wars in the past will be non-existent in our armies; typhoid fever, which devastated our armies during the Spanish-American war, is now under absolute control and every enlisted man, every officer and every nurse who goes to the front in this war will have been immunized against typhoid.

Cerebrospinal meningitis, which, thanks to Flexner and Jobling, have been rendered almost harmless by reason of an antimeningitis serum, is guarded against by immense quantities of serum, with preparations for keeping it in the base and field hospitals of Europe. Smallpox is taken care of by the vaccination of all troops and auxiliary personnel. Typhus fever, so prevalent in Serbia and the Balkan states last year, is provided against to a large extent by the sanitation prepared for our camps, by bathing and laundry facilities that will make it almost impossible for the source of infection, the body louse, to make any headway.

Our War Department long ago had its plans complete for the building of sanitary cities for the occupancy of our soldiers at the front in time of war. These plans have been changed and kept up to date and are now as complete and as scientific as human skill and scientific knowledge can make them. They call for construction and material of the best calculated to insure the health of the troops. They call for plumbing, steamfitting, pure water, good sewerage, and surface cleanliness of every description.

This war is to settle for all time the safety of all peoples against autocrats and divine-right rulers, but it is to do more than that—it is to bring the world very far forward in preventive medicine, in the scientific application in a large way of principles that have for their object the public health. We can see every day that this war is going to be worth all it is costing and will cost.

A SPRING NIGHT IN A BRITISH HOSPITAL IN FRANCE

The Humdrum Routine of Night Life in St. John Ambulance Brigade Hospital at Etaples, France

Miss Amy E. MacMahon, night superintendent of St. John Ambulance Brigade Hospital, Etaples, France, in a recent number of the *Johns Hopkins Nurses' Alumnae Magazine*, describes a specimen night in that hospital. During the day, she says, orders come to evacuate a large number of patients and to put four more beds in each ward to bring up the capacity of the hospital to 600. She is informed that a convoy of 120 patients, 100 lying and 20 walking, is due at seven-thirty that night. That means that the eighteen night sisters will have to take charge of this assignment, probably at eight o'clock. The beds are prepared for bed baths, and though the weather was warm, hot water cans are filled. A number of serious cases are expected, as the clearing hospitals are sending down many of their worst cases. Tourniquets, hypodermic outfits, a stove for boiling water, the dressing carriage, the instrument kettle, etc., are in preparation, for the night sisters soon learn that they must be ready for any emergencies. By the time the first of the convoy arrives the commanding officer of the hospital or his representative is on duty, for he watches the unloading of every ambulance, each of which carries four stretchers. The stretcher-bearers carry their patients into the admitting room and the medical and surgical officers order unconscious, delirious or very ill

patients taken directly to the ward. The other patients are asked a few necessary questions and a tally, stating ward or destination, is pinned to the front of the patient's tunic or pajamas. The stretcher is then placed on trolley wheels and taken to the ward by a covered sidewalk.

This covered walk, Miss MacMahon remarks, accounts for the hospital having received far more than its share of serious cases. Since a Zeppelin raid, however, lights in these covered walks are shaded and are turned on only when the stretchers are going to and fro. In the ward only two or three lights are turned on and these are shaded. When the patient is taken to the ward the sister in charge verifies the assignment as to ward and number of bed, feels the patient's pulse, examines dressings, asks a few questions and leaves the other details until the orderly has given a bath. In the case of a patient whose dressings are not in good condition, note of the time and the pulse is taken and the patient is asked for his home address. In the case of a patient whose condition is growing worse, the sister writes a note to the doctor and asks him to let her know if he wishes the operating room nurse called. Walking cases are given baths in the admitting block and are put to bed.

At twelve-thirty there is an opportunity for the busy nurse to eat something, and this is necessary, for another convoy is to arrive before the five o'clock evacuation takes place. This convoy consists of 100 patients of bed cases and they arrive at two o'clock. An emergency case requires the tying of an artery, application of dressing and a dose of morphine. At four o'clock the patients who are to be evacuated must be wakened. This they do not mind when it means a trip to "Blighty" (England). While the orderly is disinfecting the beds of the patients who have just gone, the sister prepares a dressing carriage, for as the ill patients wake she must wash them, dress many of their wounds and make their beds. At six o'clock those who have not already been washed by the sister or orderly must be wakened, medicines must be given, and all temperatures and pulses taken and charted before breakfast. The charts of the new patients must have names, etc., filled in, any report must be ready, service rooms must be tidied, and the floor must be swept before the day sister comes on duty. At eight o'clock it is time to go down to the sisters' mess for dinner, served at eight-twenty.

A SURVEY OF NURSING RESOURCES

New York City Takes Steps to Organize the Nursing Field For Defense—Example to Be Followed Throughout the States

In April of this year Mayor John Purroy Mitchel, of New York City, appointed a Committee on National Defense consisting of about seventy-four women interested in various kinds of work throughout the city. Mayor Mitchel expressed the desire that the work of all women's organizations engaged in activities for war emergencies be registered with this committee. This central committee appointed several standing committees, among them a standing committee on nursing, of which Miss Annie W. Goodrich is chairman and which selected as its first and most important piece of work a survey of the nursing resources of the city. A full-time secretary was appointed for the purpose of completing the survey in three months. The purpose of the survey was to find how many persons in New York were engaged in different classes of nursing service, as well as in the various nursing specialties.

To get in touch with every New York organization concerned with nursing service, it was decided to use a questionnaire, and to develop four forms, for the four types of organization concerned with nursing service, namely, institutions (hospitals, sanatoriums, "homes," reformatories, and day nurseries), public health organizations, nurses' registries and nurses' organizations. The forms for institutions request data on the various departments (medical, surgical, gynecological, orthopedic, etc.), and also on the class of service (superintendent, supervisors, and charge nurses, post-graduate students, nursing sisters, social service nurses, pupil nurses, trained attendants, attendants in training, practical nurses, orderlies, and nurses' aids). The questionnaire on public health nursing specifies the following divisions of work: administrative, supervisory, office work, general visiting nursing, prenatal, obstetrical, post-partum, infant welfare, school, contagion, tuberculosis, mental, social service, and industrial. A similar questionnaire was addressed to nurses' registries. In each case the organization addressed is asked to specify the number of male and female graduate (registered and non-registered) nurses, trained attendants, practical nurses, and nurses' aids in each specialty. The nurses' organizations were requested to give their membership. By the aid of Dr. Haven Emerson, the commissioner of health, and others a list of organizations concerned in nursing service was compiled.

It was decided that, although each set of forms should be sent out complete in itself, hoping for a quick response, each organization engaging any appreciable number of nurses should also be followed up by telephone. An appointment was made and an enumerator was sent to go over the form with the nurse in charge to see that it was correctly filled out.

These enumerators were selected from the body of volunteers, who were also nurses and were procured through the nursing organizations, the presidents of which were members of the committee. For the convenience of these enumerators the mailing list was divided into five boroughs. Into a map of each borough were stuck colored-headed pins, indicating the different divisions—first, hospitals and sanatoriums; second, other institutions; third, public health nursing; fourth, nurses' registries; fifth, nurses' organizations. The pin map proved quite necessary, in order to decide how to divide the territory of these huge areas so that the nurses should not waste any more time than possible on the road. The enumerators were very carefully instructed in the meaning of each part of the questionnaire. They thoroughly understood the purpose of the whole investigation and were thus able to give efficient service.

The entire cost of the census was $1,500.

A similar survey of the nursing resources of the various states has been authorized by the National Emergency Committee on Nursing, which has recently been made the nursing committee of the general medical board of the Council of National Defense. This state survey is to be made through the American Nurses' Association.

Miss Harriet B. Leach, of Minneapolis, assumed the duties of superintendent at the Milwaukee Maternity Hospital July 15. Miss Leach is well known in the north, having served at different times both as president and secretary of the Minnesota State Board of Nurse Examiners. She is a graduate of a New York hospital and was at one time head nurse at the New York Lying-in Hospital. More recently she has been connected with the Swedish Hospital in Minneapolis.

RECONSTRUCTION HOSPITALS FOR PROSPECTIVE RECRUITS

Philadelphia, New York, and Chicago Hospitals Undertaking the Rehabilitation of Prospective Recruits With Slight Physical Defects

We have known all along that American hospitals could be of the greatest possible use as a factor in the war upon which we are entering, but to some of us the precise nature of the usefulness of the hospitals has not been quite clear.

One of these specific uses is now taking shape. Last month we published the fact that St. Luke's Hospital of New York had appropriated a sum of money to open a thirty-bed ward for the purpose of preparing prospective recruits for the army who were slightly defective physically in some particular, as, for instance, a hernia or hydrocele, or bad ingrowing toenails, or some other condition easily remedied and without which remedy the applicant would be rejected by the army.

The College of Physicians and Surgeons of Philadelphia is now organizing a movement for the same purpose. Dr. W. W. Keen is president of the movement, and Drs. John B. Deever and James M. Anders are vice-presidents. The plan is that of Dr. William Duffield Robinson, and the Germantown Hospital has been selected as the place in which the patching up of prospective recruits is to be performed.

A third hospital has also come in under this scheme. The following letter was written to Major John A. Hornsby, M. R. C., by Dr. Max Thorek, president of the board of directors of the American Hospital and Training School for Nurses, Chicago:

"As a result of our conversation last Tuesday, I am happy to inform you that our board of directors has decided to tender to the government the services of our staff of physicians and surgeons and the new American Hospital to its available capacity is a 'repair shop,' as it were, for men who are rejected from the service of the army, navy, or marine corps by reason of defects which may be remedied by a surgical operation or medical treatment. Many of these men can be made available as soldiers or sailors, as you well know, by some surgical procedure that will fit them for active service, when otherwise they would be compelled to remain at home. While it is not the desire of our staff to pauperize any candidate to the army and navy service, still we feel that by giving our services as outlined above to individuals who cannot afford to obtain such service, the number of available individuals could be, perhaps, materially enhanced.

"We also propose to establish and maintain a department in our hospital for the correction of injuries received on the field, and endeavor to reestablish functional usefulness in limbs where such aim can be reached by orthopedic, mechanical, and other means. We also aim to establish a school for the education of such individuals to make them, as far as possible, useful members of society and to enable them to earn a living in their changed physical conditions.

"We have consulted with some of our leading citizens with a view of organizing a citizens' committee—an organization that will assist us in carrying on this work.

"Will you not present this offer to the proper authorities at Washington, that we may be guided by any suggestions they may have to make as to the scope of such services or the manner and detail of the work to be performed?"

In accordance with this request, Major Hornsby laid the offer of the American Hospital before the War Department at Washington, and received the following reply from Col. W. V. Birmingham:

"The Surgeon General requests me to thank you, and through you the American Hospital of Chicago, for your kind offer in the matter of operating on prospective recruits of the U. S. Army for the relief of slight disqualifying physical defects, such as hernia, hydrocele, ingrowing nails, etc., which are remediable by a simple surgical operation, thereby saving to the service many who would otherwise be lost."

The American Hospital is now perfecting its arrangements to open a sufficient number of beds to do the largest possible amount of work largely in connection with the recruiting service in the central department with headquarters at Chicago.

It is expected that many other hospitals in different parts of the country will offer their facilities and the services of their staffs for this same sort of service.

THE BUYER FOR THE HOSPITAL

Some Further Thoughts on a Recent Editorial "The Superintendent and the Salesman"

BY M. L. REID, San Francisco, Cal.

Such an editorial as that recently published in THE MODERN HOSPITAL, under the caption of "The Superintendent and the Salesman" cannot fail to have the widest and most salutary effect, not only on the hospitals themselves, but on all business houses that are seeking a market in the hospitals.

"Goods well bought are half sold," runs an old adage. For the benefit of the modern hospital, this might well be changed to read "Careful purchasing is the best financing." A great deal is heard about the best methods of financing institutions—of ways and means to meet a too frequent deficiency. Often these two subjects would readily solve themselves were proper attention and care given to the spending of the money already raised. No institution can hope to meet with continued success unless serious attention is paid to expenses. One of the biggest items of expense is that for supplies of all kinds.

The difference between careful buying and careless buying may spell the difference between success and failure. In any modern merchandise establishment, the purchasing department is the most important of all. Compared to the salaries paid clerks and salesmen, those given the buyers mount to princely heights. In the face of this evidence of the importance of purchasing, a great many hospitals, whose yearly purchases amount to many thousands of dollars, are very prone to let their purchasing department take care of itself. In many cases the buying of supplies is left largely to the superintendent, who gives it serious thought only when there is nothing else for him to do. Only too often an institution so conducted has no system of checking of supplies on hand. In fact, it is often the case that the superintendent does not know of the need of some particular drug, dressing, or food until the hospital's supply is exhausted. Then purchases are made from the quickest available source, irrespective of price or quality. In many cases the nearest source of supply is several days distant. It is all perfectly well to say that no hospital, properly conducted, should find itself in this position, but every reader of this article knows only too well that such an irritating condition of affairs is not at all exaggerated.

In every institution, just as in every mercantile establishment, there should be one person whose duty it is to give proper attention to the buying. If the hospital superintendent is too busy with other duties, then some one else should be appointed and held accountable for this most important work. It should be the duty of such a person to investigate, learn, and know the standing and responsibility of the various firms with which he may do business, either by mail or through traveling salesmen. The next duty is to see that every order is placed intelligently and

that the goods received are up to the proper standard in quality.

Still more important, and directly in line with the purpose which placed the buyer in his position, is the fact that an interview should be accorded every salesman who calls, representing a reputable, established firm; that an effort should be made to familiarize himself with the catalogues received; that manufacturers' and dealers' advertisements should be given careful attention. These are the three greatest sources of information for any institution, and are worth while. The buyer who familiarizes himself with conditions and who keeps posted can easily save, even in smaller hospitals, much more than his salary. But the satisfaction which the institution will gain in getting standard goods and in having satisfactory dealings with supply houses is also a benefit that can be figured in dollars and cents.

A buyer, with other duties which require his time, should set aside certain hours each day in which to interview salesmen. Above all things such a buyer, to earn his salt, should realize immediately that it is as much, if not more, to his interest and the interest of the institution which employs him, to consult with salesmen for reputable houses as it is to the salesmen. At the same time a salesman should try, so far as possible, to suit his time to the convenience of the buyer, while the buyer should realize that the salesman's time is equally as valuable as his own. Buyers should keep in mind that a traveling salesman's time is not his own, but belongs to the firm which he represents, as well as to the customer. An hour lost here, through the whim of a buyer, may mean the missing of a train and an important engagement in another city, and consequently many hours lost in the end.

Buyers should also remember that their knowledge of the standing and reputation of the house the salesman represents, and the way that house does business, is going to pay dividends to themselves and to the hospital. It is a matter of business efficiency, as well as an act of courtesy, which is sure to win in dollars in the long run.

How often does the superintendent of a hospital tell a traveling salesman he needs nothing, only to find upon a half-hour's talk that he really needed several hundred dollars' worth of supplies and needed them immediately? Or, after the salesman has been refused an interview and has gone his way, the superintendent discovers himself "out" of and in actual need of supplies on which, had he stopped to listen to the salesman, he could possibly have saved 15 to 20 percent. The only thing that stood in the way of the superintendent making that saving was his belief that he was "too busy to talk to salesmen."

Many hospital supplies, such as surgical dressings and foodstuffs, are subject to market fluctuations. The salesman for any reputable supply house should be, and generally is, well posted with reference to market conditions. The buyer has everything to gain by granting an interview to such salesmen. For instance, a hospital may be in need of gauze; any of two or three grades might be purchased to advantage at that particular time, while the time would be inopportune for contracting for other grades. But how is the superintendent to know this fact unless by talking to the salesman? The salesman can just as easily keep the superintendent or buyer informed as to market conditions on foodstuffs and other supplies and whether or not it is advisable to place the order then, or wait for a lower market.

What many superintendents and buyers are not able to realize, or rather do not seem to realize, is that the reputable, established business firm is not a gambler, trying to sell at top prices, but is instead a cooperator, only too anxious to serve its customers' wants at the lowest possible prices. Reliable mercantile firms today figure their profits on a regular percentage basis, taking into consideration capital employed and efforts expended. Whether goods are sold at high or low prices does not, in any way, affect their percentage of profit.

It is of the utmost importance that hospital superintendents or buyers should know the standing in the business world of the firms with which they do business. The firm name or trade-mark of every established business firm is generally regarded as representing a certain standard of quality, price guarantee and method of doing business, and hospital superintendents should make it their business to know what standards such names and trademarks really stand for.

Reputable hospital supply houses generally are endeavoring, through the use of experienced salesmen, through the aid of improved equipment and skilled mechanics and engineers, to further the usefulness of the modern hospital, just as much as the medical and nursing forces are, and it is with these firms that superintendents and buyers should endeavor to cooperate more liberally.

When such cooperation is fully realized between institutions and the reputable business houses "shysters" will be forced out of business, and the old question of ways and means of raising additional funds with which to wipe out deficits in the treasuries of institutions will not occur so frequently.

THE RELATION OF THE NURSES' TRAINING TO THE GREAT WAR*

Impending Scarcity of Trained Nurses—Measure to Meet the Emergency—Volunteer Nurses' Aides and Home Nursing Associations

BY JOSEPH L. BAER, M. D., F. A. C. S., Chicago.

Speakers anywhere in the United States tonight cannot fail to comment on the tremendous importance of this day of national registration, so striking an event in our history, and our relations to the great war, and you young ladies are more closely allied to this significant war movement than most of you realize at present.

The general nursing situation in the United States today is undergoing radical changes and has many fundamental problems to meet. There are at present about 75,000 graduate nurses and 35,000 pupil nurses in training in the whole country. This body is being drawn upon from two directions. First and most important is the effect of the war demands.

The army figures require that for each million men there must be 10,000 doctors and 20,000 nurses; that is, for each hundred men, one doctor and two nurses must be available somewhere in field or hospital to take care of the sick or wounded in that hundred. The government takes only graduate trained nurses, who have received the degree of R. N.—in other words, the best nursing material available.

Many of you undoubtedly know about the base hospital units formed and being formed all over the country.[1] . . .

By next year a probable minimum of 1,500,000 men will be under arms, meaning a withdrawal of 30,000 trained nurses from civilian fields.

The second draft upon the available general nursing

*An address delivered before the 1917 graduating class of the Michael Reese Hospital Nurses' Training School on June 5, National Registration Day.

[1]Eleven Michael Reese nurses are enrolled in Base Unit 14 on the active list and the same number on the reserve list.

body is the ever-increasing tendency among trained nurses to specialize. They become school nurses, sanitary nurses, industrial nurses, district nurses, executives, etc., and are thereby withdrawn from the private nursing field.

To meet this impending scarcity among the trained nurses available for the civilian population, there are two main sources of supply. The first is a temporary device, but one which will have an immense task if the war lasts as long as the government preparations would indicate. I refer to the volunteer nurses' aides, as worked out by the National Red Cross. I do not mean those who have had the courses in home nursing, hygiene, bandaging, etc., but those volunteers who have been affiliated with the base hospital units and have had thirty hours' didactic and seventy-two hours' practical work given in those hospitals. A movement is already under way to offer these same courses, consisting of a minimum of thirty hours of theoretical teaching and one hundred and twenty hours of bedside work in every available hospital in the country, making each a Red Cross base hospital and placing the courses under the control of the Red Cross, thus giving these workers an official status after completion of their course. Then, when the army makes its drafts on the trained nursing body, these volunteer aides will be available to fill the gaps wherever needed in civil or eventually in military fields.

Germany, seven years before the great war, began this system of training and so had an immense army of practical nurses ready when the call came.

The second movement is a permanent step and consists in the formation of so-called home nursing associations. The movement was conceived primarily to afford adequate nursing care in the homes of the middle and poorer classes, for whom the rates for trained nurses are a real hardship—more so now than ever, since it has been found necessary to raise the rates. Such organizations are already in existence and doing excellent work in Detroit and Boston.

They are controlled by graduate nurses who give three to six months' courses to selected practical nurses and act as a registry, placing these nurses where they are best qualified to serve.

Now let us see how the Michael Reese Training School is meeting these problems of today. There are in the school from 15 to 25 probationers, 100 to 120 pupil nurses, about 15 affiliated pupil nurses and 7 to 8 post-graduate nurses taking special courses, all working under 24 paid heads, supervisors and assistants, besides from 40 to 60 graduate nurses, chiefly Michael Reese graduates, on special duty with private patients, an organization sufficiently well trained and elastic so that, if need arises, it can absorb a great many volunteer nurses' aides (limited to 10 at a time by Red Cross). The three-year course provides much more than the minimum number of hours of theoretical work necessary to meet the Illinois State Board requirements, and still gives the nurses adequate practical training, specializing being left to post-graduate courses.

You have heard enough to convince you that the problem of the training school is bigger and more difficult of solution today than ever before, and we are exceedingly fortunate in having at the head of our training school in the person of Miss Margaret MacKenzie, not merely a capable executive, but a real nurse, one of the best of the Michael Reese graduates, who will never lose sight of the chief function of the nurse, the care of the sick.

And now, young ladies, in congratulating you on behalf of the medical staff and myself, upon the completion of your training, may I express the hope that, in whatever fields your work may lie, you will always show the same good judgment that you showed in selecting the Michael Reese Hospital Training School and that you will always uphold the best traditions of your school.

WAR-TIME ECONOMIES

Flower Hospital Has Posted No-Waste Bulletin That Should Serve an Excellent Purpose

The Flower Hospital of New York, of which Mr. Oliver H. Bartine is superintendent, has posted all over the institution a no-waste bulletin of which a reduced facsimile is herewith presented, the original being 9 by 17 inches. It is a most excellent reminder to everybody of the new era that is upon us all, and the urgent necessity for everybody to conserve everything that is of use.

WAR TIME ECONOMIES

SUPPLIES OF ALL KINDS ARE COSTLY—DO NOT WASTE.

TIME AND SERVICE COSTS MONEY.

1. Cordial and loyal co-operation WITH and WITHIN all departments is absolutely essential.

2. Physicians and Surgeons, both visiting, attending and house, as well as nurses and employees, are requested to bring about the economic use of drugs, dressings, appliances and surgical supplies, as well as all food supplies.

3. DO NOT use an appliance or a surgical instrument, except for the purpose it is intended.

4. Save the worn out article or the broken, in order to obtain a new one on requisition.

5. Extravagance of the employees is frequently criticized within and outside the Hospital. Help us to avoid this criticism.

6. Do not light an electric lamp or gas when not necessary. To do otherwise is wasting money. If you find an unnecessary light burning, turn it off. All lights not actually necessary must be extinguished by 9 P. M.

7. Do not use the printed blanks of the Hospital for any other purpose than they are designed. Blank forms cost money.

8. Old rubber is valuable. Do not throw any away. Keep rubber in a cool place. Do not allow any form of grease on rubber, as it causes it to rot.

9. Do not take the elevator to go up or down one or two flights of stairs.

10. Kindly co-operate in the economical use of linen.

11. China is very expensive. Observe the utmost caution in handling.

12. Any suggestions towards the economical use of supplies are solicited.

13. Extravagance in the use of food at the present time is CRIMINAL. Order only what is absolutely needed and return to the kitchen all unserved food.

14. Before making requisitions, assure yourself that it is ABSOLUTELY necessary.

15. Each ward or department must keep a strict account of all supplies.

16. Supplies are NOT to be taken from the Hospital.

17. Doctors, nurses and attendants are directed to use the utmost economy in the use of gauze, cotton and bandages, etc. Do not use two pieces where one will serve the purpose.

18. Loss of time is wasteful and extravagant. For instance: Late on duty often causes confusion and dissatisfaction. Late at meals, not only means delay in going on duty, but extra work in the dietary service and in other departments.

19. Handle all Hospital property and equipment with care. Our repair bill is already enormous.

20. Request for repairs should be made by the head of the department on blanks provided for that purpose and sent to the Superintendent.

21. Heads of departments will please see that these orders are rigidly carried out.

22. If we all unite in small economies, it will make for a large economy for the Hospital as a whole.

23. "We have not had to do this before," is frequently heard. It should have been then. Now it is imperative. Why question?

OLIVER H. BARTINE, *Superintendent.*

Generally speaking, hospital workers are not maliciously wasteful, but also, generally speaking, most hospital workers, including doctors and nurses, are extremely careless. Sometimes the doctors and nurses attempt to

justify extravagance in the use of supplies on the score that "human life is precious," and that a life might be jeopardized by the waste of a moment in an attempt to save an infinitely small piece of gauze or cotton. It is not a good argument, because we all waste an immense amount of time every day doing trivial things or nothing at all, and we could salvage a little of these wasted moments if only the necessity were called to our attention often enough at the auspicious moment. Mr. Bartine's bulletin would serve this purpose.

A "HUT" HOSPITAL

A Hut May Be Preferable to a Palace for Hospital Uses—Useless Luxury an Inconvenience

It seems that there has been more or less criticism by zealous British patriots because the war office has not commandeered this or that luxuriously appointed club for hospital purposes. Lance-Corporal Ward Muir, R. A. M. C. T., Third London General Hospital, writing in *The Hospital*, London, June 9, demonstrates the falacy of the idea that for a hospital "any pleasingly situated edifice will do, provided beds and nurses are shoveled into it in sufficient quantities." He compares the actual comfort and working efficiency of wards domiciled in an orphans' home built "in the Scottish baronial style of architecture beloved by mid-Victorian philanthropists" with those sheltered by huts:

"The best part of our hospital—*the* hospital to most of us—came into being when the commandeered Scottish baronial orphans' asylum was found to be too small. Then were built 'the huts.' The word 'hut' suggests something casual, of the camping-out order; a shed knocked together with tin-tacks, doubtfully weatherproof, and probably scamped by profiteering contractors. . . . The finely austere and efficient ranks of hut-wards which constitute the main part of the Third London General Hospital are the very antithesis of that picture. They may look flimsy. They were certainly put up at a remarkable pace. . . . But, in the long run, the ideal hospital remained—a hospital with which the So-and-So Club in Pall Mall, for all its luxuriousness, could never hope to compare. . . .

"Looked at from outside, a hut-ward is—to the esthetic eye—a hideous structure. Knowing what it stands for, the science, the tenderness, and the fundamental civilization which it represents, we may descry, behind its stark geometrical outlines, a real nobility and beauty. Entering a typical hut-ward you behold thirty beds, fifteen on each side of the room. Between each pair of beds is a locker in which the patient stows his belongings. In the central aisle of the room are the sister's writing-table, certain other tables, chairs, and two coke stoves for heating purposes in winter. The floor is carpetless, and maintained in a meticulous state of high gloss by means of daily polishings. At a height of a few feet from the floor, the asbestos-lined walls cease, and become windows. There is no gap in the continuous line of windows all down each side of the ward—a special type of window which, even when open, declines to allow rain to enter. In consequence of these windows the ward is not only well lit, but also airy and odorless. When all the windows are open (which is the case throughout the entire summer and generally the case in winter also), the patient has the advantage of indoor comfort plus an outdoor atmosphere. At the end of the ward a covered veranda is spacious enough to take an extra couple of beds for those requiring completely open-air treatment.

"The ward proper has certain additions; a kitchen with gas stove and geyser, a sink room with geyser and cleansing apparatus of special pattern, a bath room with geyser, lavatories, a small room for the isolation of a patient on the danger list, a linen room, and cupboards. All these are packed neatly under that one rectangular corrugated roof, which looked so ugly and so unpromising from outside.

"Do not pity the wounded soldier because he is quartered in a hut. The word sounds unattractive. But if it is the right kind of hut, he is in the soundest and most sanitary type of temporary hospital that the mind of man has yet devised. . . ."

THE RED CROSS HOME NURSING COURSES

Admirable Instruction Organized for the Women of the Country Before Outbreak of War—Popular Interest Aroused

For about a year before the United States was drawn into the war, the American Red Cross had been preparing to offer the women of the country instruction in home nursing, dietetics, etc. The intention was not to furnish a short cut to the nursing profession, or even to prepare nurses' aids, but to make women more efficient in the care of their own families within their own homes. The entry of this country into the great war has greatly stimulated popular interest in the courses; it has also created some confusion in the popular mind as to their purpose. It has been assumed sometimes that the instruction thus given qualifies for some kind of professional service, and the Red Cross has found it necessary to emphasize that, so far from preparing Red Cross nurses, the courses do not even attempt to prepare nurses' aids. The purpose is simply to teach the women of the country those things which all women should know about hygiene, home care of the sick, dietetics, first aid, etc. Four courses are offered, as follows:

A. Elementary hygiene and home care of the sick (fifteen lessons).

B. Dietetics (fifteen lessons).

C. Surgical dressings (eight lessons).

D. First aid.

The course in elementary hygiene and home care of the sick must be given by a Red Cross nurse; that in dietetics, by a dietitian officially appointed by the Red Cross; that in first aid, by a physician approved by the Red Cross. The cost of instruction is in each case borne by the class, which may not contain more than ten or more than twenty members. Pupils who attend 80 percent of the classes are allowed to take an examination given by a certified examiner, and those who pass with a grade of 75 percent or higher receive a certificate from the American Red Cross. All courses are open to women over 16 years of age. The teaching centers which have been organized over the country have been enthusiastically attended. That organized in Chicago under the auspices of the Chicago Chapter of the Red Cross, under the directorship of Miss Ursula C. Noyes, for instance, has already had 7,000 pupils in one or more courses.

While the successful completion of any or all of these courses does not qualify the pupil for service as a nurses' aid, Course A (elementary hygiene and home care of the sick) is required of all candidates who wish to take training qualifying them to act as volunteer nurses' aids in base hospital units; preference is given to women who have had also the other courses of instruction offered by the Red Cross Bureau of Nursing Service. Accepted candidates bind themselves to two years' service, if called on, for which they must prepare themselves by taking seventy-two hours' training in a hospital. Each base hospital unit may have twenty-five volunteer aids on active service and twenty-five in reserve. It should be added, however, that no volunteer aids have yet been called into service. The Red Cross does not approve of the placing in military service of women who have received only this elementary training until it becomes absolutely necessary.

DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH,
Teachers' College, Columbia University, New York City.

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

The 1917 Annual Meeting of the National Organization for Public Health Nursing

BY ELIZABETH G. FOX, Superintendent of the Instructive Visiting Nurse Society, Washington, D. C.

If crowded round tables, eager, rapid-fire questions, attention so fixed that the closing hour goes unheeded, and urgent requests for more and more round tables—if this diligent seeking after knowledge and untiring enthusiasm are the "growing pains" of healthy progress, then the National Organization for Public Health Nursing surely displayed the robust vigor of youth in its fifth annual convention in session jointly with the American Nurses' Association and the National League of Nursing Education the last of April.

Outstanding among the many subjects under discussion were health insurance, health centers, health conditions in prisons, social hygiene, and the extension of prenatal and postnatal nursing.

The significance of health insurance and the necessity for it were presented in a large joint session in the evening of April 27 of the three national organizations by Dr. Charles Hatfield, Mr. Miles Dawson, Dr. I. T. Rubinow, and Miss Pauline Newman. The three national bodies of nurses approve of the principle of health insurance and endorse and support the inclusion of nursing service in the provisions of the model bill. The words "adequate nursing care," appearing in every bill so far drafted, give an opportunity to provide nursing service to a far larger proportion of the population than has ever before received the benefit of such service. The very newness and vastness of the possibilities with their many ramifications brought the realization that there should be no hasty, ill-conceived interpretation or execution of this new function of nursing. For this reason no action was taken. The committee representing the three organizations was instructed to continue its study and to present to the convention a year hence its report, which would include a carefully worked-out plan, defining the words "adequate nursing care," and describing the precise methods of putting this provision of the bill into practice.

The wide reach and inclusiveness of a thoroughgoing plan of community health preservation came out in the description of health centers. According to Dr. William C. White, of the University of Pittsburgh, any complete plan would evaluate and use in due place and proportion the household group, mother, wife, sister, and untrained practical worker, the graduate nurse in the home, and the consultant and specialist nurse. Every factor which enters into the problem should be played up and used to the limit of its ability. The responsibility of the municipal government to take over each branch of public health nursing, child hygiene, tuberculosis, contagious and venereal disease, school, prenatal, bedside nursing, mental hygiene and others, and to weld all these into an effective unit was warmly advocated by Dr. Robert H. Bishop, of Cleveland.

Mr. Thomas Mott Osborne had the close attention and interest of the nurses at one of the evening sessions, while he told his story of the conditions in American prisons, dwelling especially on the menace to the public of the disregard of disease among the prisoners. He said that the men got their revenge on society by carrying back to society disease, both moral and physical, acquired in prison.

The statement, made by Dr. Grace L. Meigs, of the Federal Children's Bureau, that outside of hospitals the death rate from childbirth has shown practically no decrease in twenty years, and that in 1913 childbirth caused more deaths among women 15 to 44 years old than any disease except tuberculosis, intensified the interest that has been growing recently in the problem of securing better medical and nursing care for women prior to, during, and after confinement. The needs of remote rural homes were clearly brought out. According to Dr. Meigs, a county unit with doctor, visiting nurses, and a central prenatal and infant clinic, perhaps at the county seat, might be one way of reaching the difficulty. That this situation must be taken up and dealt with much more vigorously than hitherto was the unanimous opinion.

The Academy of Music was packed for the evening session of the Red Cross, which is fully described in the report of the American Nurses' Association. Of special interest to public health nurses was the urgent plea of Dr. Warren H. Wilson for two hundred Red Cross nurses immediately for rural work. Dr. Wilson presented in fascinating, glowing words the great need for public health nurses in the southern mountains. He struck a note that was already hammering loudly in many minds. Many of the public health nurses were torn between their desire to serve the armies of their country in the Red Cross ranks and to serve the civil population by remaining at their public health nursing at home. The urgency of both demands made it and will continue to make it a very difficult decision for each individual nurse to make.

A ringing resolution was passed and sent to President Wilson, expressing sympathy for and confidence in him, and closing with these words:

"Resolved, That we pledge our best service to the Nation wherever called upon to render it, either in home or foreign field, in the daily routine of civil or military hospital or in the equally great effort to conserve, protect and strengthen the health and endurance of the citizen population, the men, women and children at home in our land."

A goodly number of lay women directors of various public health nursing organizations attended the convention and held many round tables for the discussion of their several administrative problems. The good to be gained from this meeting of administrators, executives, and staff nurses was forcibly demonstrated.

Some four hundred nurses and lay women were registered by the National Organization for Public Health Nursing. The nurses represented every branch of public health nursing, industrial and mental hygiene, medical social service, and prenatal care, as well as the more common branches of visiting, school, and tuberculosis nursing, and others. Miss Mary Beard, superintendent of the Instructive District Nursing Association of Boston, retains the presidency of the National Organization another year.

The Demand Which Mental Hygiene Makes Upon the Graduate Nurse*

BY JESSIE TAFT, Ph. D., Social Service Director of the Committee on Mental Hygiene of the State Charities Aid Association, New York City.

The mental hygiene movement thus far has spent its energy in two general directions: first, the education of the public to a less prejudiced attitude toward mental disease through the publicity work of mental hygiene societies; second, the education of the hospital for the insane to an appreciation of the importance of prevention and to the part played by social service and the readily accessible mental clinic. For this work mental hygiene needs the graduate nurse. It cannot go on indefinitely without her, and yet nurses as a group have not, up to this time, taken the part they are equipped to take in this movement. They have been so occupied and absorbed in the overwhelming problems of the field of physical hygiene that they have hardly become aware of the responsibility for mental health, which rests upon them with equal obligation. Many individual nurses, it is true, have played an important part in the mental hygiene program, but nursing as a profession has not yet perceived the bearing of this new field upon the public health in general. Health is not really being conserved or disease prevented as long as the entire field of mental life with all its possibilities for disaster is being ignored.

My purpose is to take up each of the two phases of the mental hygiene movement just mentioned, point out if I can the part which the nurse should be taking, and present what seems to me the logical next step in mental hygiene and its even closer connection with the work of the public health nurse.

The publicity phase of the mental hygiene movement has for its chief object the raising of the level of general intelligence on the subject of insanity and hospitals for the insane. It is trying to bring about on the part of the general public a more rational attitude toward diseases of the mind, such as already prevails with regard to diseases of the body except among the most ignorant.

Regarding mental disease there is a blank wall of ignorance and prejudice to be overcome which is comparable to nothing in the field of physical hygiene, except perhaps venereal disease. Even the great mass of ordinarily intelligent people recoil from the very idea of insanity as if it were a crime. They tend to postpone any kind of medical treatment as long as possible; they shun the state hospital for the insane as if it were a prison and will take any kind of quack treatment at outrageous prices in something labeled sanatorium rather than accept the best expert attention in an institution which frankly treats mental disorders. The ordinary man has not, as a matter of fact, advanced very far beyond the period of superstition regarding mental diseases. He is barely removed from the concept of insanity as demoniacal possession. You would have to leave the circle of the average intelligent citizen to find a person who still treats physical illness as essentially mysterious, to be cured by something having no relationship to it, such as magic or a charm. But on the mental side, the average citizen is as much a prey to superstition as if he had not been born into a scientific age.

Not many weeks ago I talked with a college man, a teacher of mathematics, who had allowed his wife, ill with one of the most serious mental disorders, to experiment with various cults for mental healing. Then he had paid out something like $100 a week for purely custodial care in a sanatorium. He shrank from the notion of a hospital for the insane as if it were a pesthouse. His wife, if she recovered, would never forgive him for putting her with insane patients; it would rankle in her mind always.

It is this kind of blind fear and prejudice even among the otherwise intelligent that mental hygiene has to break down before mental health and disease can be treated rationally like physical health and disease. The mental specialists are eager to give necessary enlightenment, but they are powerless to reach more than the comparatively few with whom they come into direct contact. Without the social worker they have no means of getting at the general public effectively. The social worker is one great medium through which the knowledge of the psychiatrist can work its way out into human life. And of all social workers the public health nurse is the most important, because, along with her social viewpoint and her general knowledge of the importance of the social situation in her cases, she has the medical background and the scientific attitude toward disease which needs only to be extended to the field of mental diseases—and, above all, because of the great influence which she has over the attitude of the people in her district.

The position of the nurse in public confidence is certainly unique. She carries with her an authority which no other worker possesses. She is more responsible than any other class of individuals except the physicians for the place which physical hygiene now holds in our civilization. Once let the public health nurse accept the mental health of the community as part of her responsibility and equip herself to deal with the mental situation wherever she meets it, the wall of ignorance and prejudice which the specialist throws himself against in vain will soon begin to crumble.

The district nurse has it in her power to influence the family in which there is a case of definite insanity to send the patient to a hospital where he will receive proper care. She is in a position to see many cases of mental disease in their beginning stages and is the logical person to point out to the family the true nature of the trouble and urge the need of early treatment. She is the one who can spread the knowledge of the mental diseases due to syphilis and alcohol into the farthest nooks and corners of an ignorant foreign neighborhood. If every district's visiting nurse were alert to mental symptoms as she is to physical symptoms, she would be able not only to do an immense amount of prevention, but also actually to lift appreciably the weight of ignorance in her particular neighborhood. Is there any good reason why she should not do just this?

With that phase of the mental hygiene movement which has to do with the public hospitals for the insane, the experience of New York State offers an excellent illustration. The work in New York State began eleven years ago when the State Charities Aid Association formed what was known as an after-care committee. Their idea was to show the hospitals the desirability of paroling patients and the possibility of doing it frequently if some worker became responsible for supervision. This idea grew with the growth of social service and the increasing emphasis of psychiatrists on the need for prevention and early treatment of mental diseases, until finally, six years ago, the present Mental Hygiene Committee of the State Charities Aid Association was born, with the ultimate purpose of showing the hospitals for the insane that their real field is outside the hospital and their greatest work prevention. In other words, they set about to socialize the state hospital. This involved a demonstration mental clinic to show what a psychiatrist and a social service worker,

*By courtesy of the American Journal of Nursing.

working together, could do practically to keep people out of hospitals for the insane. The demonstration was so successful and so convincing that today, after six years of work, this committee has the satisfaction of seeing its purpose well on the way to fulfillment.

Two years ago there were not more than half a dozen mental clinics maintained by state hospitals outside their own walls and only an occasional hospital which had a nurse appointed to visit paroled patients. Today practically every hospital has gone out into its district and established one or two mental clinics where anyone may come to consult a specialist about his mental troubles as easily and inconspicuously as he would consult an ordinary physician. Today not a single hospital is without a social service worker, whose work in the clinic is involving as much general preventive work as it does work with the paroled patients. Twenty-three clinics of this character are now in operation under a regular schedule, and so great was the existing need that, once people understood about their purpose, many clinics were swamped at their opening sessions.

Of course, the state hospital social service nurse is overworked and she is often not sufficiently equipped for the job; but at any rate she is there, and in her the value of social service with the mentally ill has been officially recognized. However untrained and unfitted she may be, the fact remains that she is opening up a new field of opportunity to the modern graduate nurse. Salaries are already being raised to $1,000 and $1,200 with maintenance. The hospitals are already asking for more social workers. The social service nurse for mental case work was formally welcomed at the annual meeting of state hospital superintendents last winter, and already the State Hospital Commission is considering the standard of requirement for such work and the possibility of putting the position under civil service.

We probably cannot estimate now the immense importance of this change of policy on the part of the state hospitals, of this determination to step beyond the hospital walls and become a vital part of the community life in their districts. Its ultimate development no one can anticipate, but one thing is clear—that the success of this movement depends to a large extent on the tact, intelligence, and social training of the nurse who, in the last analysis, must be the one to make the connection between the clinic and the community. If she is equal to the greatness of her opportunity there will be no limit to the work which she can do in making the hospital for the insane, once chiefly custodial, an effective instrument in the prevention of mental disease and in the positive increase of mental welfare and efficiency within its district.

Will the nursing profession, through the influence of its organized power, help to put into state hospital social service work a type of nurse who is equal to the opportunity?

These two aspects of the mental hygiene movement, the education of the general public and the preventive work of the state hospitals through the mental clinic, valuable and necessary as they are, are nevertheless, as I believe, only the forerunners of the heart of the movement. They are attacking from the outside, in an external fashion, the end-results of unhygienic mental living as they manifest themselves in adult life. Mental hygiene, to become an organic part of our social organization, will have to make another approach, an approach which will attempt to modify beginnings rather than endings. Psychiatrists tell us that the morbid tendencies and unhealthy mental attitudes which lead to badly adjusted lives, even when they do not result in some functional mental disease, must be reached, if we are to have genuine prevention of mental disorders, when they are still in the process of being formed. If this is true, it is the child, not the adult, who offers the most fruitful field for mental hygiene, and it is only through the public school system that we shall be able to get at the child effectively.

The school with its hold on child life is the nucleus—the growing point of our civilization—the center through which most of our social problems are to be attacked. Once let mental hygiene enter into the school system in the thoroughgoing way in which physical hygiene has already entered, and its connection with the life of society becomes vital.

This is not such a utopian idea as one might think at first, nor is it without precedent. We have grown so accustomed to seeing the schools take the responsibility for the physical health of children that we forget it has not always been so. We forget what a revolutionary idea it once was to expect schools to look after eyes, ears, noses, and throats, as well as reading, writing, and arithmetic. We now accept placidly as a matter of course the obligation of the school to equip its children with as healthy bodies as possible, but we are startled and skeptical when the perfectly logical next step is taken—requiring the school to be as interested in making minds healthy as it has been in making bodies healthy. It would be hard to recall a time when a sore throat in the school room had significance chiefly from its effect on the attendance; when it was not recognized as a possible symptom of certain unhygienic conditions demanding attention both for the sake of the child and for the sake of the entire school, rather than as a bare fact, likely to spoil the attendance record of the child or the class for that month.

Yet that is just the condition in which certain mental phenomena stand today in the school room. Persistent, unexplained tardiness or truancy, unusual obstinacy, extreme unsociability or shyness, unaccountable failure in class work on the part of the bright child—all of these are recognized, it is true, but they are recognized for the most part as bare facts affecting the discipline, attendance or scholarship of the class, not as symptoms of a condition in the child's inner life which demands attention. This ignoring of the mental life of the child, except that attenuated, intellectual phase of it which is involved in the learning and reciting of lessons, and the failure to see any meaning in unusual reactions to school life except their disturbing effect on school routine—this blindness is the most discouraging feature of the school situation at the present moment, particularly in our large cities.

That it is possible for a child to commit suicide because it fails of promotion, as occurred a year ago in New York City, may be an indication of the neurotic character of that child, but it is equally an indication of the utter failure of the school to understand the kind of child it was dealing with or to attempt to give that child a more reasonable estimate of the value of promotions. The school evidently had not had the slightest comprehension of what failure in school work meant in that child's life—a meaning dependent on an unusual sensitiveness to social approval—perhaps to undue pressure at home. But that does not alter the fact that the school failed utterly in helping that child to solve its most vital problems because it had never regarded the guidance of the instinctive and emotional development of children as part of its duty.

I recall another child who showed a peculiar negative reaction to many commands. Frequently when told to sit down she would persist in standing. She had been

known to stand for half an hour rather than obey. This conduct was considered purely a matter for discipline. The child was naughty and obstinate. The problem was how to force her to behave. The teacher was quite aware that she had an unusually difficult child and would have been glad of some assistance, but neither she nor the school as a whole had ever learned to approach such a condition from the mental side. They did not see the child's obstinacy as a symptom, and made no effort to find out what meaning it had for the child—what factors in her life were producing such an outward result and how they could be modified.

Conduct as disturbing as marked stubbornness, truancy, violent outbursts of temper, inability to give attention in the school room, and the like is sure to come to the attention of the teacher even when it is not recognized as a symptom of an underlying unhealthy mental condition. But other more subtle and unobtrusive manifestations usually escape observation entirely, and no attempt whatever is made to deal with them on any plane. Children who suffer from an intense self-consciousness and shyness, who are fearful and apprehensive, who are quite unsocial and do not mix with other children, who show unusual depression, who are dreamy and unpractical, or who are apathetic and passive, with little active interest in anything, are not recognized as problems because they give little or no trouble. They are frequently excellent in school work and are models of good behavior. They are, nevertheless, quite as badly adjusted as the more spectacular group and in need of a training which will get at the root of their difficulties and help them to overcome their unhealthy tendencies.

Two objections to the adding of such a tremendous responsibility to the already overworked school system will come at once to mind. You can never be sure that any given child was destined to become insane, and, after all, only a comparatively small proportion of children in each school are likely to develop a mental disease. The homes and outside agencies and physicians ought to assume care of this number.

The plea for mental hygiene in the public schools is based on something broader than what is implied in these two objections. To reject it on the ground that it is too subtle and too exclusive would be like rejecting physical hygiene because it includes specific complicated diseases affecting comparatively few children. Mental hygiene, after all, includes much more than insanity. If you could not be sure that a single child in a given school would ever develop a mental disease, there would nevertheless be the obligation to give each child as healthy a mind as possible. Insanity in its acute form is only one result of an unhealthy mental development. It is the extreme limit, and below that limit there are existing in thousands of individuals all degrees of mental disturbance which may never reach the point of being recognized either as mental or as disease. Yet these individuals are doomed to suffer through life—are forced to lead a crippled existence and are the very ones who would have benefited most by assistance in their school days. There is no one of us so well balanced as not to have been benefited by an educational system which considered mental hygiene a part of its duty.

This next step in mental hygiene, which we must take if prevention of mental disease is going to mean anything, cannot be taken without the cooperation of the school nurse. The school nurse and the visiting teacher, who is often a nurse as well, are the ones who will have to pave the way for mental hygiene in the school. It is they who must make the connection between the school and the mental clinic. It is they who must be alert to see, in the difficult child referred to them, the mental factors as well as the physical conditions which are at the bottom of his maladjustment. We may succeed in supplying mental clinics to be used by the school, but of what use will that be unless mental difficulties are recognized as such and the child brought to the physician? The mental clinic must depend largely on the school nurse and the visiting teacher for its material. If they are blind to mental symptoms the clinic will fail.

You nurses who have at heart the physical well-being of the world—you who are the guardians of the bodily health of the children—it is for you to realize that the health problem is still unsolved as long as mental health remains unprotected. You who have already so many burdens upon your capable shoulders will have to take on one more responsibility. We are looking to you as the most effective instrument we have to help make mental hygiene a reality in the school and safeguard the children against mental as well as physical disaster.

LETTERS TO THE EDITOR

For Better Laundry Work

To the Editor of THE MODERN HOSPITAL:

Some time ago it came to my knowledge that the Department of Household Arts Education of Teachers College, Columbia University, had a woman capable of giving expert advice along lines of laundry efficiency, who could be obtained for a month's service at a reasonable figure. She was employed at Lakeside Hospital for one month. In this time she won the cooperation of the laundry employees and put many changes into effect. She also left a full report of her observations with recommendations in detail. There has been a decided improvement in the color of the linen and the quality of work done. The number of men employed has not been changed, but the number of women has been decreased from eighteen to ten. There is no longer trouble about the delivery of the linen. It is always ready. It is my opinion that the assistance to hospital superintendents who cannot be expected to keep up with the recent rapid development in laundry work obtained by this means is worth far more to the institution than the cost.

This woman was apparently familiar with laundry machinery and proved of real assistance in the selection of machinery adapted to the peculiar needs of institutions. Lakeside has received so much benefit from this service that I wish to recommend it to other hospital superintendents for consideration, especially to those who do not believe that there is need for it in their institutions. It was my opinion, based on casual observation, that the Lakeside laundry, before these modernizing changes were made, compared satisfactorily with the laundries of other institutions. The necessity of replacing some worn-out equipment led to the special consideration of the laundry, which resulted in attempts to learn how real laundry people would run a hospital laundry and what kind of machinery they would have to do the work.

If you wish you may publish this letter.

A. R. WARNER,
Superintendent Lakeside Hospital, Cleveland, Ohio.

The daily habit of life should be based on moderation.—Kansas State Board of Health.

BULLETIN OF THE AMERICAN HOSPITAL ASSOCIATION

Monthly Bulletin issued from the Executive Offices
Medical Arts Building, Philadelphia, Pa.
WILLIAM H. WALSH, M. D., Secretary.

The Cleveland Meeting of the American Hospital Association

We are publishing this month the tentative program of the Cleveland meeting of the American Hospital Association, which takes place September 11-14. Arrangements have been made for a larger meeting than has ever been held before. Because of the necessity to devote most of the time at the Cleveland meeting to discussions as to what the hospitals may and shall do under the acute conditions of the war, the program as published is announced as tentative, the purpose being to shift the items of the program so that as much time as possible and needful may be devoted to the war.

High officers of the government will be in attendance; there will be a splendid commercial exhibit, and, while the recreational or social part of the program may have to be largely dispensed with because of the urgency of the business of the meeting, it is beyond question that this is to be the most important—indeed, the epochal—meeting of our association.

The trustees have sent out a letter to every hospital in the country, urging the trustees of the hospitals to pay the expenses of a representative to come to the meeting. In an editorial in this issue the reasons why every hospital must be represented at the Cleveland meeting are stated.

Official Program of the Cleveland Meeting

TUESDAY, SEPTEMBER 11

MORNING

9:00: Invocation.
9:10: Address of welcome.
9:20: President's address—Dr. Robert J. Wilson, New York.
9:50: Response—Dr. J. W. Fowler, Louisville, Ky.
10:00: Report of secretary—Dr. William H. Walsh, Philadelphia.
10:30: Statement of treasurer—Mr. Asa S. Bacon, Chicago.
10:50: Report of board of trustees.
11:10: Announcements.
11:30: Adjournment.
11:40: Inspection of commercial and noncommercial exhibits.

AFTERNOON

2:00: Organization and Direction of After-Care Committee for Poliomyelitis—Dr. Donald E. Baxter, New York City.
2:20: Discussion.
2:30: Report of Committee on Out-Patient Work—Mr. Michael M. Davis, Boston.
3:00: Discussion.
3:10: The Venereal Disease Problem and the Hospital—Dr. H. L. F. Locke, Hartford, Conn.
3:30: Discussion.
3:50: Publicity as a Means of Education and Support—Dr. Frederick D. Greene, New York City.
4:10: Discussion.
4:30: Adjournment.

Business Meeting

4:30: Consideration of secretary's report.
4:50: Consideration of trustees' report.
5:10: Report of Membership Committee.
5:20: Report of Publication Committee.
5:30: Other business.
5:50: Appointment of Committee on Time and Place.
6:00: Adjournment.

WEDNESDAY, SEPTEMBER 12

MORNING

9:00: Report of Committee on Health Insurance—Dr. S. S. Goldwater, New York City.
9:20: Discussion—Opened by Mr. G. W. Olson, Minneapolis, Minn.
9:40: The Workmen's Compensation Law and Its Relation to Hospitals—Dr. Thomas Howell, New York City.
10:00: Discussion.
10:20: Hospitalism, Causes and Treatment—Mr. Pliny O. Clark, Wheeling, W. Va.
10:40: Discussion.
10:50: The Reorganization of the Civilian Hospital on a War Basis—Major Winford H. Smith, M. R. C., Baltimore.
11:10: Discussion—Opened by Major John A. Hornsby, M. R. C., Chicago.
11:30: Role of the Civilian Hospital Organization in Time of War—Colonel Jefferson R. Kean, U. S. A., Director American Red Cross.
12:00: Adjournment.

AFTERNOON

2:00: Report of Conference Committee on Standardization of Hospitals—Dr. W. H. Smith, Baltimore.
2:20: Discussion—Opened by Dr. J. A. Hornsby, Chicago.
2:40: Annual reports—Dr. T. M. McEachern, Vancouver, B. C.
3:00: Discussion.
3:20: Superintendents' Responsibility for Correct Dietary—Miss F. A. Blanchfield, Bellevue, Pa.
3:40: Discussion.
4:00: Practical Hospital Economics—Dr. Walter Morritt, Colorado Springs.
4:20: Discussion.
4:30: Adjournment.

Business Meeting

4:30: Report of Committee on Constitution and By-Laws—Richard P. Borden, chairman, Fall River, Mass.
5:10: Report of treasurer.
5:30: Report of Auditing Committee.
6:00: Adjournment.

EVENING

8:00: Report of Committee on Accounting—Dr. A. R. Warner, Cleveland, O.
8:20: Discussion—Opened by Mr. Cornelius S. Loder.
8:40: The Annual Budget and Its Supporting Statement—Dr. A. C. Bachmeyer, Cincinnati, O.
9:00: Discussion—Opened by Mr. Howell Wright, Cleveland, O.
9:20: Equalization of Departments in Accounting—F. E. Chapman, Cleveland, O.
9:40: Discussion.
10:00: Adjournment.

THURSDAY, SEPTEMBER 13

MORNING

Large Hospital Section

9:00: Oil as Fuel—Dr. John M. Peters, Providence, R. I.
9:20: Discussion—Opened by Mr. Oliver H. Bartine, New York City.
9:40: The Hospital, a Teaching Institution—Dr. H. G. Goodwin, Albany, N. Y.
10:00: Discussion—Opened by Dr. C. R. Holmes, Cincinnati, O.
10:20: The Relation of the Superintendent to Research Work—Dr. H. O. Collins, Minneapolis, Minn.
10:40: Discussion—Opened by Dr. J. F. Baldwin, Columbus, O.
11:00: Municipal Training Schools—Dr. Cleveland H. Shutt, St. Louis.
11:20: Discussion—Opened by Dr. A. B. Ancker, St. Paul, Minn.
11:40: The Preservation of the Health of the Civilian Population in Time of War; What the Civilian Hospital May Do to Aid the Government—Surgeon-General Rupert Blue, U. S. P. H. S.
12:00: Adjournment.

Small Hospital Section

9:00: The Relation of the Superintendent to Governing Board and Obligation as Admitting Officer—Miss Alice C. Cleland, Northampton, Mass.
9:20: Discussion.
9:30: The Obligation of the Community to Support Adequate Hospital Facilities—Dr. W. T. Graham, Iowa City, Ia.
9:50: Discussion.

10:00: Clinical Laboratory for a Small Hospital—Miss Nellie F. Parrish, East Liverpool, O.
10:20: Discussion.
10:30: Visiting and Visitors—Mr. Joseph Geffen, Philadelphia.
10:50: Discussion.
11:00: Controlling Basis for the Economical Use of Supplies—Dr. H. J. Moss, Baltimore.
11:20: Discussion.
11:30: Qualities that Make a Good Superintendent of Nurses.
11:50: Discussion—Opened by Miss Ida M. Barrett, Grand Rapids, Mich.
12:00: Adjournment.

AFTERNOON

Large Hospital Section—Round Table, Conducted by Daniel D. Test, Philadelphia.

3:00 to 4:30: Five questions to be propounded; each speaker will be allowed five minutes.

Small Hospital Section—Question Box.

3:00 to 4:30.

Business Meeting

4:30: Unfinished business.
4:50: Report of Committee on Time and Place.
5:20: Report of Nominating Committee—Dr. Renwick R. Ross, Buffalo, N. Y.
6:00: Adjournment.

FRIDAY, SEPTEMBER 14

MORNING

9:00: The Mixed, Permanent Staff Hospital—Dr. H. L. Foss, Danville, Pa.
9:20: Report of Committee on Legislation—Dr. George O'Hanlon, New York City.
9:50: Discussion.
10:00: Report of Committee on Preparedness—Dr. F. S. Washburn, Boston.
10:20: Discussion.
10:30: Report of Delegate to American Medical Association—Dr. John A. Hornsby, Chicago.
10:40: Report of Delegate to American Public Health Association—Mr. Michael M. Davis, Boston.
10:50: Report of Committee on Necrology—Dr. Henry Hurd, Baltimore.
11:00: Tuberculosis—Dr. E. S. McSweeney, New York City.
12:00: Adjournment.

AFTERNOON

2:00: Address—Governor Cox, of Ohio.
2:30: Installation of newly elected officers.
3:00: Announcements by trustees.
3:30: Address of thanks to the city of Cleveland.
4:00: Adjournment.

Official Bulletin for July

For the reason that some of the government officials who will present papers at the coming convention in September have not yet been designated, it is impossible at this time to give their names; however, we desire to throw out a few hints as to the subjects that will be presented.

Every gathering in America this year, whatever the object of its meeting, can render definite, valuable and far-reaching patriotic service by putting before its members in formal address the purpose and objects of the war as defined by President Wilson in his message to Congress April 2:

"We shall fight for the things which we have always carried nearest our hearts—for democracy, for the right of those who submit to authority to have a voice in their own government, for the rights and liberties of small nations, for a universal dominion of right by such a concert of free peoples as shall bring peace and safety to all nations and make the world itself at last free."

The League to Enforce Peace, of which William H. Taft is president, will supply a speaker to inform the members of our organization of the reasons why the United States has entered into the world conflict, and to solicit their cooperation in securing the establishment of a permanent league of nations to guarantee the world against wars in the future.

One of the most important considerations confronting our civilian hospitals today is the necessary reorganization that must be accomplished in order that the fullest cooperation may be rendered to the government. This subject, bristling as it does with vital points of interest to all, will be presented by Dr. W. H. Smith, of Baltimore, who for some time has been on duty in the surgeon general's office in Washington with the rank of major. Discussion will be opened by another leader of our organization, Dr. John A. Hornsby, who has also been commissioned a major in the Medical Corps and is taking a very active part in medico-military affairs in Chicago.

After learning of the most advanced ideas regarding reorganization for war, our members will want to know just what their hospitals can do to assist the government and what will be expected of them in this connection. This subject will probably be handled by Col. Jefferson R. Kean, director of military relief of the American Red Cross. Colonel Kean has one of the biggest tasks before him that has ever been thrown upon the shoulders of a single army officer, and he will welcome the opportunity to tell the American Hospital Association just how each individual member can help.

The United States is ever mindful, even during periods of stress, of the civilian population, and, while most of our resources must of necessity be conserved for the protection of our country, there is and always will be an immense civilian population that requires just as much attention during the progress of war as at any other time. The surgeon general of the United States Public Health Service, General Rupert Blue, or his representative will therefore speak upon the preservation of the health of the civilian population during the war and will point out what the civilian hospital may do to aid the community and the government.

The foregoing is merely a suggestion of the topics already listed that have a direct bearing upon the efforts of the government to coordinate every possible agency in the country; there are many more subjects under consideration upon our Cleveland program that are of equal importance, but it is obvious that we cannot list them all here.

RED CROSS NURSES

For some time past numerous protests have poured into this office, and others have been sent to the various officials of the American Red Cross, objecting to the unjust discrimination by that body against registered graduate nurses who happened to be trained in a hospital that could not claim a minimum average of fifty beds. This matter was very carefully discussed by the trustees at the last meeting, and it was generally agreed that it was an unreasonable and unjust discrimination against a great number of qualified women who were ready and willing to serve the government during the present crisis. While the majority of those present were in favor of a resolution addressed to the Red Cross calling attention to the discriminating clause and requesting its abrogation at least during the war, it was deemed wise to submit it to the absent members before final adoption. The secretary sent a copy of the resolution to the two absent members, and upon receiving their replies reported its adoption. Copies were sent forthwith to the various officers of the American Red Cross.

The trustees are determined to use every legitimate means to commit the highest officials of the government to the principle that nurses who have met the full profes-

sional requirements of their respective states should be eligible, so far as professional requirements are concerned, for any branch of the national service.

RESOLUTION

WHEREAS, We are informed that under the present requirements of the American National Red Cross, nurses who graduate from hospitals having a daily average of less than 50 patients are not eligible for appointment as Red Cross nurses, and

WHEREAS, Many such nurses are anxious and willing to offer their services as a patriotic duty, and

WHEREAS, The services of all available nurses may be of the utmost importance in the care of the sick and wounded resulting from the perils of war, and

WHEREAS, The American National Red Cross, through its officials, may readily satisfy itself by means of proper regulations and examinations of the capacity of applicants to competently serve; now, therefore, be it

RESOLVED, That we, the trustees of the American Hospital Association, respectfully recommend that at least during the present exigency the regulations above referred to might be suspended in order that those women who are otherwise qualified to render valuable service shall not be debarred from patriotic service because thereof.

LETTER TO HOSPITAL TRUSTEES

The trustees of the American Hospital Association authorized the secretary to send to the various boards of hospital trustees a letter calling attention to the manifold advantages of attendance at conventions, and urging the hospitals to meet the expense incident to the trip. The letter will be sent out probably before this bulletin is in print, and will be inclosed in an envelope addressed to each member of the association, together with a tentative program for the coming convention. The letter should be formally submitted to the board of trustees of each hospital if the recipient believes that such a letter will be of any help.

SPECIAL RAILROAD RATES

The railroads have granted this year our request for special rates to Cleveland, and members may secure definite information regarding them from local railroad officials. The rates are granted on condition that tickets be purchased between certain dates and are not good after a specified period.

REGISTRATION BUREAU

Hospitals desiring the service of this bureau are requested to furnish us with definite information regarding vacancies to be filled in order to save time and expense. Certain information is always necessary; for instance, the salary to be paid, the number of beds, the number of graduate nurses employed. Much of this information is usually contained in the annual report, a copy of which should always be sent.

A SEX HYGIENE EXHIBIT FOR RECRUITS

Educational Measures Devised by the Missouri State Social Hygiene Society for the Protection of Recruits at Jefferson Barracks

Shortly after the order for mobilization was given, the Missouri State Social Hygiene Society began preparations looking toward the protection of recruits against venereal infection through educational means. It was thought that the most effective way of educating the men would be through a specially prepared exhibit on sex hygiene and the venereal diseases. Permission was first secured through Major Pipes, medical officer of Jefferson Barracks, to place the exhibit at that camp. A tent measuring 12 feet by 20 feet, with 6-foot walls, was supplied by the St. Louis Public Health League and erected on the grounds near the Y. M. C. A. recreation tent. Along the midline of the floor of the tent a vertical wooden framework was built and on it were suspended the pictures making up the exhibit. There are twenty-two of these placards, each measuring 22 inches by 28 inches, suitably framed and artistically prepared, and arranged so that the visitor by beginning at No. 1 and following along in consecutive order, will have obtained a fair comprehension of sex hygiene and the cause, diagnosis, and prevention of veneral disease. The general arrangement of each placard is this: Above, in heavy black type, appears a question such as, "What is stricture and how is it caused?" or "When is it safe for one who has had syphilis to marry?" Below this question is an illustration under which appears the answer to the question and an explanation of the picture. The text is concise and easily understood. The illustrations consist of diagrammatic and anatomical drawings and photographs of actual cases, and colored pictures designed to add to the interest of the exhibit.

Through the generosity of a friend, sufficient funds were secured to employ a young man to act as attendant. He is stationed at the tent each day where he answers questions, explains difficult passages and gives personal advice. He also distributes literature. Four specially prepared pamphlets are being used, "Sex Hygiene for Young Men," by Dr. Belfield; "Friend or Enemy," by Dr. Exner; "Keep in Fighting Trim," American Social Hygiene Association, "Venereal Diseases," a reprint of the pamphlet published by the New York Board of Health. Some 200 men visit the exhibit daily, and it has the indorsement and commendation of the chief medical officer and of many physicians and social workers who have seen it. It was recently visited by an agent from the War Department, who pronounced it the best he had seen thus far in his tour of training stations and mobilization camps. Analyzing questions which are asked, it is quite evident that there is a woeful lack of correct knowledge on the part of young men, especially those coming from smaller towns, on this vital subject. Questions such as, "Does gonorrhea ever run into syphilis?" "Is 606 a sure cure?" "Is syphilis curable?" are asked with great frequency. Through the knowledge thus gained the society hopes to amplify and improve the exhibit so that it will meet the needs of the men.

Perhaps the most important mobilization problem is that of the prevention of venereal disease. While it is true that some men will not be restrained from sex license by the knowledge of sex hygiene, it cannot be denied that the facts obtained by this method will aid many recruits in practicing continence, which, for the first time in history, has been recognized by the army and navy officials of a great nation as "the best safeguard against venereal infection." Moreover, by impressing those who are already or who will become infected, with the importance of early and thorough treatment, the spread of the disease will surely be limited. Anything which will keep a fighting man sound and healthy is of the greatest importance because a man who has been infected, no matter how mildly, is placed on the sick list and becomes a burden instead of an asset to the nation. Previous wars have invariably been followed by an increase of gonorrhea and syphilis among the general population. If the soldier can be sent back home with a sane knowledge of sex hygiene and a fear of the venereal diseases instead of an infection, we may hope that history may not repeat itself this time.

This plan as carried out by the Missouri Social Hygiene Society is supervised by the American Social Hygiene Association, the only association in this field recognized by the National Board of Defense.—Editorial, Jour. Missouri State Med. Assn.

DEPARTMENT OF DIETETICS

Conducted by MISS LULU GRAVES,
Dietitian of Lakeside Hospital, Cleveland, Ohio.
Please address items of news and inquiries regarding Department of Dietetics to the editor of this department, Lakeside Hospital, Cleveland, O.

How the Dietitian Can Help You

BY LENNA FRANCES COOPER, Director of the Battle Creek Sanitarium School of Home Economics, Battle Creek, Mich.

A hundred years ago nursing as a profession was quite as little known as is now the work of the dietitian. Year by year the work of the nurse has increased in efficiency and popularity, so that now it is a well-standardized profession and the name is a household word. "Dietitian" is a comparatively new name and likewise a new profession. The dietitian's profession is closely allied to the nurse's, and is evidently destined to almost as great if not as great popularity. Even now the dietitian is an indispensable member of the staff in many hospitals, and yearly other hospitals are adding her to their faculty. But there still exists, in the minds not only of the laity, but of many of the medical profession as well, a very indefinite idea of what a dietitian is trained to do and how she can serve an institution or the medical profession.

One physician, who was desirous of bringing the efficiency of his hospital up to the highest point possible and was, therefore, desirous of adding a dietitian to his staff, made inquiry as to the duties of such a member and also asked if she would be willing to occupy her spare time by doing clerical work! A perfectly legitimate question to ask and one which probably almost any dietitian would answer in the affirmative if such a thing were possible. However, there is scarcely a hospital in which such an arrangement would be a practical one, for the dietitian is trained to serve the institution in a much greater capacity than that of a clerk. There are also hospitals in which the dietitian is not serving in her most useful capacity, probably because the work in that particular institution was organized a number of years ago, before the dietitian was trained to do as many things as she is now prepared to accomplish. It is the purpose of this article to point out some of the ways in which she can serve and some of the responsibilities she is prepared to assume.

In the hospital her duties may fall into one of three groups, viz.: (1) to have charge of the diet kitchen; (2) to supervise the culinary and dietary departments; and (3) to take charge of all of the household departments, in which case she is generally called dietitian-housekeeper. If her duties come under the first group, she will have the following responsibilities:

1. Planning and supervision of all special and weighed diets and nourishment.
2. Catering to private patients.
3. Ordering supplies from steward or storeroom.
4. Supervision of the preparation and serving of all food prepared in the diet kitchen.
5. Supervision of the cleaning in diet kitchen.
6. Teaching of dietetics, foods, and cookery to nurses.

Such a dietitian is usually responsible to the superintendent of nurses and is ranked as a member of the training-school faculty. If this dietitian is a well-trained woman and has executive ability, she may serve the hospital in a larger field by assuming entire charge of the food problem, as outlined under the second group of duties. In this case her duties are largely administrative, although she still has the supervision of the diet kitchen, having as an assistant a competent nurse or a second dietitian. In addition to being responsible for the special diets, she will have the following duties:

1. Planning menus for the household, including staff, nurses, domestic help and patients.
2. Taking entire charge of kitchen, serving rooms and dining rooms.
3. Hiring help in her departments.
4. Buying of the food (this she may or may not do).
5. Checking up the bills of the departments.
6. Teaching the nurses.

This *managing* dietitian is usually responsible to the superintendent of the hospital and is a member of the staff.

The third type of dietitian, the dietitian-housekeeper, is also occupied chiefly with administrative affairs and is in reality a *managing* dietitian. Her responsibilities are the same as the second type of dietitian, i. e., manager of the food departments, and in addition she has the following duties:

1. Supervision of all household cleaning.
2. Supervision of laundry (if done on the premises).
3. Looking after the linen, including the mending.
4. Employing of all domestic help.

The dietitian-housekeeper is also responsible to the superintendent of the hospital. This type of work is usually done in the small hospital, since the work in the food department alone, in a larger hospital, is all that one person can handle successfully.

The duties, as outlined above, may be varied to meet the needs of the institution, but in the main they represent what may logically be expected of the dietitian.

Are you getting from your dietitian the best service she is capable of rendering to your institution? Is she capable of supervising your food department instead of being limited to the diet kitchen only? A trained woman in charge of your food department can save you money, for she understands not only food values, but monetary values of foods as well. She can feed your hospital family more satisfactorily than an untrained person because she knows the bodily needs and how to meet them.

There is still another way in which some dietitians can serve their hospital, but generally lack the opportunity, i. e., as consulting dietitians. Many of the hospital patients need specific instruction in the selection and preparation of food after leaving the hospital and ofttimes are very greatly in need, while at the hospital, of some individual attention, which the dietitian could render if there were an opportunity for her to come in contact with the patients. Why not allow her to make the rounds of the wards either with the doctor or with the ward nurse? Let her ascertain whether the food being served agrees with the patient and if it is palatable. Science has demonstrated conclusively that appetite plays an important part in the digestion of food. This principle should be made of practical use in the care of the sick.

It may be that for special reasons your hospital does not need the services of a trained woman for full time, in which case you will undoubtedly need a *teaching* dietitian who can come to the hospital for certain periods during the year to give the necessary instruction in foods, cookery, and dietetics.

If you are in private practice, why not have for your office assistant one who can do your laboratory work, attend to the office routine and look after your special diets as well? There are women who are qualified for filling such positions.

The work, then, of the dietitian naturally falls into three classes, i. e.: (1) *managing*, where the work is chiefly administrative; (2) *teaching*, where the work includes only the teaching of subjects relating to dietetics; and (3) medical, where the work is more specifically the planning and preparation of diet in disease.

The Conservation of Food

BY DR. J. A. WESENER and GEORGE L. TELLER of the Columbus Laboratories, Chicago.

[Continued from the July issue.]

It is a source of much satisfaction to us to see in the newspapers that Commissioner Hoover has decided that no wheat is to go abroad, that the milling is to be done in this country, and that the finished article, flour, is to be shipped for export. This is a proper and important economic measure. It leaves the bran and other offals for home stock-feeding and fertilization of the land. While in this way we will send the concentrated refined food abroad, we will retain the coarse, nutritional elements for both animals and the land. The other day we noticed a squib in the paper by our colleague, Dr. Wiley, recommending two wheatless days a week. At first blush this looks like a very excellent conservation measure, but the moral connected with this is, why should we make ourselves martyrs, or be the pincushion of the affliction when other means and measures can be used which would meet the purpose of conservation in a much more effective and satisfactory manner? It seems that the purpose of the writers on these subjects is to impress upon the American people that "war is hell" and therefore they must immediately assume an attitude of suffering to harmonize with the prevailing conditions.

Now, our attitude is an entirely different one. We believe in rational conservation of the food, based upon keen efficiency. We cannot see any difference in the saving of foodstuffs by denying oneself for two wheatless days per week when the same wheat product can be diluted and lengthened by blending in with it other cereals, and this can be easily carried out by taking all of the flour produced from the wheat, which represents about 75 percent, and blending with it other cereals, such as corn and barley flour, cornstarch and other cereals. These cereals can be blended in with the wheat flour to the extent of possibly 30 percent, depending upon the nature of the wheat flour to which these are added. In conserving in this manner, no American food standards are torn down. No denial of good, wholesome food is then necessary, or at least not until the entire supply is so far decreased that denial becomes an actual necessity. What we want to emphasize is to make use of all good, wholesome cereals, and especially those that are selling for less money than wheat, for blending, and thereby enlarging our foodstuffs. Bread made from such blends, with corn and wheat flour as the bases, will produce an article which is up to the esthetic American food requirements. In working in this way you do not disarrange the standard as to appearance, taste, and nutritive value of the finished article, "bread." Now, then, after these means have been exhausted, it will be sufficient time to undertake more drastic measures. This can be done by making other blends, which will not quite come up to our standards, but nevertheless will give an article which will be wholesome and nourishing. It is also our opinion that, proceeding in this way, the conservation will have a strong bearing on the law of supply and demand. If, for example, the American nation consumes 120,000,000 barrels of wheat flour per year, and this is lengthened with 20 percent of corn products, there would be an increase of 24,000,000 barrels of flour per annum. Corn always being the more abundant cereal, sells for considerably less than does the cereal wheat. Analyzing these startling figures from a board of trade point of view, it means the same thing as would the introduction of nearly 100,000,000 bushels of wheat. This additional amount does not exist, but in the law of economy acts in the manner on the prices as though the 100,000,000 bushels of wheat actually existed. What will be the effect of the unexpected offer of 100,000,000 bushels of wheat on the market? It will cause a drop in the price of wheat and tend to stabilize the prices of both of these cereals more in keeping with normal market conditions.

[To be continued.]

The Rotary Club of Indianapolis has issued a four-page pamphlet in the interests of food conservation, which contains more information in a concise but easily comprehended form than any publication which has yet come to our notice.

The first cover page is designed to attract attention and appeal to the patriotism of the public. "How You Can Do Your Bit and Help Our Boys Win the War" is placed conspicuously at the top of the page. In large type across the inside pages is the statement of the secretary of agriculture relative to $700,000,000 being wasted in America every year; in smaller type a number of valuable points are discussed briefly, but in a way that impresses one with the fact that they are vital; such as, "How This Criminal Waste is Made Possible," "How to Eliminate Waste," "What Your Food Must Do," "Classification of Common Foods According to Chief Food Constituents." The fourth page is devoted to recipes and menus which are not only possible, but practical.

These pamphlets have been given wide distribution through the schoolchildren.

Diet is a really serious matter and many people suffer as much from dietary eccentricities and food fads as from actual disease. The average individual can eat good, plain, wholesome food in moderation all his life without ever being aware that he has a digestive apparatus. Starvation to cure a fancied ailment or to reduce an expansive waist line has shortened many lives, just as indiscretion in the opposite direction. Certain diseases do require a particular diet, but this should be chosen by a physician of skill and not self-prescribed. The self-prescriber often has a fool for a patient.—Health News, U. S. Public Health Service.

Dr. John Lloyd, for the last seven years superintendent of the Virginia State Tuberculosis Sanatorium, at Catawba, has accepted the superintendency of the Iola Sanatorium, a 250-bed institution maintained at Rochester, N. Y., by Monroe County. Dr. Lloyd is a graduate in liberal arts and medicine from the University of Virginia and is 38 years of age. He will assume his new duties September 1, succeeding Dr. Montgomery E. Leary, resigned.

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General, United States Army.

The First Children's Hospital in Norway (Det forste barnehospital i Norge). Tidsskrift f. d. norske Laegefor., Kristiania, 1917, XXXVII, No. 8.

As the Herman Francke Home for Boys was moved from Christiania into the country, the fine three-story building of the institution is to be converted into a children's hospital. The building is to be remodeled on the plan of the Dr. Barnardo Children's Hospital in London. It has, as it now stands, room for sixty patients, but it is planned to enlarge the hospital so as to fill all the demands made upon it. This is the first children's hospital in Norway, as heretofore children have been treated in special divisions of the general hospitals.

A Special Center for the Examination and Complementary Treatment of Discharged Wounded Soldiers (Un centre spécial pour examen et traitement complémentaire des blessés réformés). Drs. J. Camus and O. Riche. Paris, méd., 1916, VI, No. 41.

In May, 1916, an institution was established in Paris for the purpose of examining and treating permanently disabled wounded soldiers. Its purpose is to ascertain the amount of disability and to fix the indemnity to be paid by the state. The institution is splendidly equipped with Zander, x-ray, and electrical apparatus, etc., as well as with the delicate instruments (goniometer, dynamoergograph, reflexometer, Marey tambour, etc.) to ascertain the amount of disability. In a great number of cases the pension allowed by the government has been reduced; in others it has been increased.

A Surgical Automobile Ambulance (Une ambulance chirurgicale automobile). Dr. R. Monod. Paris méd., 1916, VI, No. 32.

The surgical automobile ambulances were established in the French medical service with a view to performing operations in the field. The medical personnel consists of 4 surgeons and 4 physicians, an x-ray man, 10 students of medicine, and 16 male nurses. The necessary apparatus is transported on three trucks. One truck carries a large boiler, two autoclaves, two kettles, and the radiators for the central heating apparatus. The second truck carries the x-ray apparatus and the third the surgical instruments, dressing material and the pharmacy. On the road these trucks make 15 kilometers (between 9 and 10 miles) per hour. Arriving at the place of their destination, the operation pavilion is at once mounted. It consists of boards, and measures 14.45 by 4.85 meters (about 47½ by 16 feet). It contains three rooms, two operation and one sterilization room. This pavilion is so simple in its construction that it can be put up within three hours.

Some Observations on Treatment of Pulmonary Tuberculosis in the San Juan del Monte Sanatorium (Algunas observaciones sobre el tratamiento de la tuberculosis pulmonar en el sanatorio de San Juan del Monte). Drs. J. Fabella and A. Hernandez. Rev. fiilippina de med. y farmacia, Manila, 1917, VIII, No. 1.

The San Juan del Monte Sanatorium was founded by the Antituberculosis Society of the Philippines. Patients from all social classes are received, but only incipient and moderately advanced cases are admitted. Advanced cases are sent to the San Lazaro Hospital in Manila. From fifty to sixty patients are treated every month at San Juan del Monte. About 25 percent of the patients with incipient cases are cured in from six months to one year, and 33 percent leave the sanatorium much improved. In the moderately advanced cases only 13⅓ percent were markedly improved. In the treatment tuberculin T. R. was employed in a few cases with much success.

Transportation of Wounded Soldiers by Aeroplane (Le transport des blessés en aéroplane). Dr. R. Blanchard. Paris méd., 1916, VI, No. 29.

As far back as 1912 Dr. Duchaussoy proposed to the Ladies' Society of the French Red Cross to utilize the aeroplane for the transportation of wounded soldiers. The question was submitted to the minister of war, who considered the plan impracticable, and nothing was done at that time. But when the war came, the idea of Dr. Duchaussoy was soon to be realized by French aviators in Serbia. When Prizrend was threatened by the advancing Bulgars the question of removing the wounded became pressing. There were six French aeroplanes in the city. These six aeroplanes carried six officers and seven French soldiers to places of safety. In some cases the wounded were carried across the mountains to Scutari, a distance of 150 kilometers (over 90 miles). Thus aerial transportation of the wounded is no longer theoretical, but should receive the serious attention of the medical service.

Hopital No. 32 Bis, Hopital Francais de New York, Passy par Vernon (Yonne), France. Alonzo M. Nodine, D. D. S. New York Med. Jour., 1917, CV, No. 23.

The hospital described by Dr. Nodine is about 60 miles southeast of Paris and 50 miles from Verdun, from which it receives its wounded. It is known also as the Fitzgerald Foundation and is under the administration of the French Hospital of New York. Dr. Nodine, who returned from France November 4, organized the department of oral and dental surgery in this hospital.

It is lodged in the historic Chateau de Passy, which dates back to the tenth century. There is room for 165 beds in the wards and in addition a large tent can accommodate forty beds. The large wards are in the chateau proper, the smaller in buildings surrounding one of the courts. All kinds of wounds, involving every part of the body and of every degree of severity, are found in the wounded received in this hospital, which has received as many as eighty wounded in a day. On a notification of half an hour the hospital can transport sixty wounded in its ambulances from the railroad station about three miles away.

Another example of its efficiency is the fact that excellent food in good variety is furnished at a cost of but 40 cents a person per diem for the entire organization. The entire cost for each patient per diem ranges from $1.25 to $1.50 a day, depending on the number of patients. The hospital is said to be unique among French hospitals in

receiving no grants or subsidies from the government in the shape of either supplies or money.

The hospital is equipped with its own electric light plant, hot and cold water supply system, disinfecting plant, steam heat, mechanotherapy department, thermotherapy department, electrodiagnostic department, bacteriological laboratory, x-ray and fluoroscope laboratory, machine shop, carpenter shop, laundry, five automobiles and ambulances, vegetable garden, pigs, pheasants, poultry, rabbits, and lambs.

The médecins chefs have been some of the most distinguished surgeons in the United States, and the assisting surgeons are from the best hospitals in the United States and Canada. The work here, especially the treatment of fractures, has received high praise. The hospital supplies its patients with artificial limbs of the best American design and construction.

The department of dental and oral surgery, which is particularly described by Dr. Nodine, is equipped to take care of the wounds of the face and jaw, as well as do all the necessary dental work and is now organized for continuous service to the end of the war.

Organization and Functioning of a Work Cure in a People's Sanatorium (Organisation et mise en œuvre d'une cure de travail dans un sanatorium populaire). Drs. F. Dumarest and A. Vigne. Paris méd., 1916, VI, No. 30.

Frimley Tuberculosis Sanatorium, which was until lately under the management of Dr. Paterson, receives its patients from Brompton Hospital in London. They are very carefully selected and the patients chosen are only such as offer the possibility of a cure. If on his arrival at the sanatorium the patient shows any febrile condition, he is first completely immobilized in bed for a few days until the fever has completely disappeared. Then he is allowed to get up and take short walks. Still later he is gradually put to work. At first he carries small burdens, which are gradually increased in weight. Then he is put to work with a shovel in the garden, the work being slowly increased day by day. The female patients perform similar graduated exercises. This method has proved a great success, and it has been introduced in a number of sanatoriums in England and also in Germany and the United States. Such an institution was established in France at Hauteville in 1909. The exercises are similar to those of the Frimley Sanatorium, and the results have been very good so far.

St. Luke's Hospital for Chinese of the American Church Mission, Shanghai. China Med. Jour., Shanghai, 1917, XXXI, No. 1.

Fifty years ago a dispensary was opened in Shanghai by Archdeacon Thompson and Rev. H. N. Woo with a capital fund of $84. From the start patients came in crowds. An appeal made in the local press for additional funds elicited subscriptions amounting to 700 taels. With this sum thirteen houses were purchased for 10 taels, and a small hospital was built on the land thus acquired. These were the beginnings of St. Luke's Hospital. The hospital grew and was gradually enlarged. In 1901 Dr. Jefferys became a member of the staff. Largely through his efforts it became possible to tear down the old buildings and to erect the present modern structure. But even this building has become unequal to the demands made upon it, and, as the grounds are too limited to permit of a permanent extension, it is now intended to select a new site on which to erect a new hospital. It is confidently expected that Chinese and foreigners in Shanghai will contribute liberally for this purpose.

The Prophylaxis of Venereal Diseases. Mazyck P. Ravenel, M. D. Social Hygiene, 1917, III, No. 2.

Statistics of venereal diseases, except for certain groups, as the Army and the Navy, are lacking. Dr. Ravenel says that registration must be insisted on for these diseases just as for smallpox and diphtheria. Public health laboratories for diagnosis are of prime importance. The importance of laboratory control over gonorrhea is not yet realized. Although gonorrhea is much more prevalent than syphilis, the number of specimens from suspected cases of syphilis exceed those from gonorrhea by approximately three to one.

It is unfortunate from the public health point of view that in most cases the symptoms of venereal disease are so mild as to make it impossible to keep the patients in hospital until they have ceased to be dangerous to the community. The majority of hospitals, however, bar such patients at the stage at which they are most dangerous.

Dispensaries play a large part in the treatment of venereal patients, but, even when well conducted, leave much to be desired because patients will not continue treatment until cured. The figures from four of the best New York dispensaries show that but 8 percent of gonorrhea patients were discharged as cured. In Boston, 11.4 percent of 450 cases of gonorrhea treated at the Boston Dispensary were reported as cured. In a series treated at the Lakeside Hospital Dispensary in Cleveland, 12 percent were cured.

Ravenel reviews the various measures of prophylaxis—control of prostitution and alcohol, suppression of "anatomical museums" and "men's specialists," rational legislation against the marriage of persons with venereal disease, encouragement of early marriage, and education and moral training. He concludes that the utilization of every agency is necessary for the attainment of any degree of success.

The Protection of the Poor Insane (Il patrocinio dei pazzi poveri). Dr. L. Bignami. Osp. maggiore, Milano, 1917, V, No. 1.

In Italy, as in all other countries, the care and protection of the insane has made great progress during the last fifty years. Among the men who worked incessantly for the betterment of the condition of the insane Luigi Lolli stands first. He founded the Manicomium of Imola, which is capable of caring for 800 patients and which is the largest institution of its kind in Italy. In his work Dr. Lolli found that the patients who were cured and left the hospital were received with indifference and suspicion by the people among whom they lived. There have long been societies for the protection of these patients in England and France. Lolli was the first to organize such a society in Italy. Through his efforts the Society for the Protection of the Insane in the Province of Bologna was established by royal decree. The purpose of this society is to assist poor patients who leave the hospital cured until they are able to make a living for themselves, and to help poor women whose husbands are under treatment in the hospital, and to assist them in the education of their children. Through the efforts of Dr. Lolli it was decided to turn the proceeds of the patients' work during their stay in the hospital over to this society in order to enable it better to carry out its charitable purposes. In many of the other provinces of Italy there exists absolutely no provision for the care of patients who are discharged from the hospitals as cured.

The New Gynecological Clinic of the University of Munich. München. med. Wchenschr., 1916, LXIII, No. 51.

This institution was opened on December 17 last. It is a magnificent structure and the largest of its kind in Germany. The ground comprises 13,236 square meters and cost the city $200,000. The building costs were 3,100,000 marks ($775,000); the expense for the furnishings amounted to 900,000 marks ($225,000). In the center of the building is an immense courtyard. Almost all the sick rooms open into this spacious court. Though the hospital is located in a populous part of the city, the patients are by this arrangement protected from the noise of the streets.

The Modern Hospital—Its Form, Function, and Work. Henry A. Christian, M. D. New York State Journal of Medicine, 1917, XVII, No. 5.

Dr. Christian says that hospitals are seldom beautiful, because medical men know little or nothing of architecture and architects are likewise generally ignorant of medicine. Professional requirements within dominate the exterior, and the architect produces an unsatisfactory and unlovely compromise. The sky-scraper type of hospital is the expression of the need for a hospital in a thickly congested district, where land values are great. A cottage type is adapted to the needs of those chronically ill in mind or body, for whom outdoor occupation and not merely the passive enjoyment of air is needed. The pavilion type is intermediate between the sky-scraper and the cottage type and combines the advantages of the two. The pavilion type is just now preferred for large hospitals for patients acutely ill with non-contagious diseases, since it gives an abundance of air and light and still does not require so much land that it cannot be placed near congested districts. The foregoing types comprise almost all of the larger American hospitals. The small hospital usually is but a single building of moderate height, intermediate between the single building of the pavilon type and the sky-scraper. While the average of American hospital construction is good, the chief criticisms that should be made of them are that they have cost too much and that their construction and equipment is better adapted to the work of the surgeon than to that of the physician. Hospital trustees and staff usually spend too large a proportion of the available funds on buildings and too little on equipment and maintenance. Too much of what is spent on construction is paid for things which do not materially enhance the comfort of the patients or the efficiency of their treatment. If no one in a hospital—superintendent, staff member, nurses, or patient—knows how a given feature helps the patient, directly or indirectly, it may be set down as useless. To spend more of the available funds on buildings for a hospital for the sake of creating a handsome memorial, for instance, is in Dr. Christian's opinion little short of misappropriation of funds. As to the criticism that the construction and equipment of American hospitals are better adapted to surgical than to medical work, Dr. Christian does not imply that surgical equipment is better than it should be, but that medical work is generally handicapped by insufficient laboratory space, too few trained technicians for the numerous tests used in the medical diagnosis, and lack of space and equipment for various forms of hydrotherapy, mechanotherapy, accurate dieting, etc.

The alleviation of suffering and the cure of illness constitute the chief but not the sole functions of the hospital. Its educative and investigative functions are equally important. The education imparted to the nurses, medical students, and graduate physicians, and the education given to patients are both important. The investigation carried on in the hospital freshens the daily routine of medical practice and administration. As to organization, Dr. Christian believes that there has been too much tendency to advise a fairly uniform plan for all hospitals, with too little consideration for individual variations and local conditions. From experiments in staff organization now under way much could be learned. In the older organizations the superintendent was the man most constantly "on the job" who represented continuity of policy. In some hospitals now which have chiefs-of-service continually on duty, it is the superintendent and his assistants, not the professional staff, whose work takes them away from the hospital part of the day. New relationships constantly will have to be worked out.

Cardiac Clinics. J. S. Ferguson, M. D. Archives of Pediatrics, XXXIV, No. 4.

Because death from heart disease is comparatively infrequent among children, the medical profession has been inclined to neglect the cardiac problems of childhood. While few children die from this cause, however, many carry the burden of cardiac disability on into maturity. The relatively small ratio of cardiac cases (less than 1 percent) announced as found among school children in 1913 surprised Dr. Ferguson by its lack of agreement with experience in dispensary cases, in which there is a very considerable proportion of cardiac lesions. Believing that conditions under which the school examinations were made were not such as to disclose the true conditions, Dr. Ferguson suggested to the Social Service Department of Bellevue Hospital that a survey of neighborhood children be made. This was accomplished in the summer of 1915 with the cooperation of the Department of Education, and disclosed about 7 percent of organic or functional cardiac murmurs in a large group of nearby school children. This group of children with "lame hearts" is relatively enormous. In order to make a preliminary study of the facts to ascertain what might be done in a small way, a group of cardiac children was organized in connection with Dr. Ferguson's clinic at Bellevue late in 1913, and in 1916 was merged into a larger group in the clinic now under the direction of Dr. Charles H. Smith. Dr. Ferguson cites an illustrative case of one child in whom was found a loud aortic diastolic murmur, hypertrophy, and beginning decompensation. The child's family, which lived four flights up, was induced to remove to a lower floor and to follow some simple rules of hygiene and exercise, but efforts to secure for the child instruction in a schoolroom located on the lower floor of the school building were unavailing. Dr. Ferguson says:

"We establish open-air classes for the anemic and the tubercular, we send carriages for the crippled and automobiles for the poliomyelitic—when, when will we learn to admit the crippled heart to the same privileges as the crippled legs? There are less than 5,000 crippled legs in New York City as a result of the recent appalling epidemic of poliomyelitis among our children, and we are doing much to alleviate their suffering; there are more than 25,000 crippled hearts (Holt) among the school children of New York, and we are offering them little or no assistance to facilitate their recovery."

He suggests that by competent recognition of the possible sources of cardiac diseases, by carefully following up cases at their homes, by studying the epidemiology, the cardiac clinic with an effective social service can do much for the prevention of heart disease in children and can thereby reduce a fertile source of adult morbidity and adult mortality.

VOLUNTEER WORKERS IN THE DISPENSARY

A Plan for Supplying the Needs Produced by the Scarcity of Medical Men Due to the War—Better Care Provided by the Use of Volunteer Workers

Dr. Charles Hendee Smith remarks, in the *Journal of the American Medical Association*, that the dispensary problem in New York and other large cities is always an acute one. The out-patient departments never have physicians enough to man them properly. The result has been careless, hasty work with short and incomplete histories, "snap" diagnoses, and unsatisfactory treatment. The outbreak of the war has only intensified this situation, since the physicians who work in dispensaries are mostly young men able to volunteer for military service. The war, moreover, will surely increase the number of patients applying for treatment because the higher cost of living will increase relative poverty and the removal of large numbers of soldiers from the families of the poor will diminish family incomes.

A plan devised by the children's medical division of Bellevue Hospital has been successfully put into practice. The out-patient department has been reorganized and an effort has been made to raise the standard of work. Special classes have been formed for conditions which lend themselves to class or group treatment, such as infant feeding, heart disease, malnutrition and syphilis. Each man in the department devotes one day a week to the general clinic, one day to the infant-feeding class, and one day to one of the other special classes. Thus each man is free from routine on one of his three days and is given time to work on a special problem. Of the eighteen physicians and two interns working in this department (with an average attendance of about nine physicians a day), however, several were called into military service at the outbreak of the war and others will soon be called. To obtain other physicians appears hopeless. There are no funds available for paying clerks, yet something must be done if old methods of hasty, careless work are not to be resumed.

A plan was, therefore, evolved by which volunteer workers are enrolled who take histories of new patients. By the use of form histories, it is said, an untrained but intelligent woman can take a good history after a little instruction and with two or three days' experience. The physician who examines the child can, in a very short time, amend or add to the history as may be necessary. The volunteers during the taking of the history discuss with the mother the habits and hygiene of the child and suggest the importance of a proper diet, cleanliness, fresh air, sleeping hours, etc., and give out a diet list and a slip with general rules for the care of the child. The mother feels that the volunteer is not a mere clerk, and the volunteer has an interest and sense of responsibility which relieves the tedium of the history-taking. The child is then weighed and measured and the temperature taken, all of which, Dr. Smith remarks, can be done by anyone with a little experience. The baby is then stripped for examination and covered with a blanket while waiting for the physician. The volunteer remains during the examination so that she may know the diagnosis and see any point of interest. The physician writes the physical examination, which takes only a moment with the printed form. He then tells the mother and the volunteer what should be done for the child and writes out the prescription. The volunteer writes out the advice given, copies the prescription on the chart, sees that the mother understands the directions, emphasizes the important ones and tells the patient when to return. Most of this time-consuming work, though it should be done for every patient, is ordinarily omitted when the hurried physician is responsible for it all. This plan is said to save about three-fourths of the physician's time. Moreover, every patient leaves the department with a fairly accurate history, a complete examination, a diet list, instructions in hygiene, and with better treatment and advice than can be given by any imaginable system in which the physician would have to do all the work. The human interest in the problem, moreover, arouses the enthusiasm of the volunteer, and this is a valuable element.

Dr. Smith suggests that there is no good reason why the volunteer system, which has been adopted in some other hospitals since it has been started at Bellevue, should not be developed widely and its scope increased into further aid to the social service work in the homes of the poor.

"SISTER" NURSES IN BRITISH HOSPITALS

There Are Ranks in the Wards as Well as in the Trenches —What Constitutes a "Strafer"

The following explanation of the nursing hierarchy in British military hospitals is apparently by a wounded officer who is able to "sit up and take notice." He writes in the *Morning Post:*

"It is etiquette to call her always 'sister,' though technically 'sister' is an intermediate grade between 'nurse' and 'matron.' Matron is a great dignitary. She has, in the language of the bar, 'taken silk,' and when her silk gown rustles into the room it is etiquette for officers to stand up, provided they have legs and strength to stand up. Otherwise you 'come to attention' by smiling as well as you can; a respectful, cheerful, but not an hilarious or free-and-easy smile. It should convey the message that you are having the time of your life in the best possible of hospitals under the best possible of matrons. The sister whose patient you are will be very much hurt if you do not smile properly at Matron.

"A 'strafer' is a sister who by ten years or so of hard, anxious work and self-denial has reached to the giddy height of £40 a year and a professional skill which saves lives daily and cuts weeks off one's stay in hospital. A good 'strafer' goes over a wound with the enthusiasm of a thrush with a large family going over a lawn for worms. She examines, searches, squeezes, probes, looking out for shed pieces of bone, for 'proud flesh,' for odd corners where inflammatory matter might lurk. She is looking for mischief, and any mischief found is promptly 'strafed.' If it is bad she calls in the doctor; if it is minor she has her own little armory of mischief-breakers, scissors, pincers, nitrate of silver, and the like.

"Of course, matrons are very trying. Somehow they can never learn that cigarette ash on the floor is neither unhygienic nor really untidy; and they expect the masculine mind to conform at short notice to all the ridiculous feminine prejudices about waste-paper, clothes as chair drapes, and so on. Their minds are not broad enough. But there is an element of reason in the objection to keeping bottles in your bed or fruit under your bed.

"But, as I have ventured to hint—differing therein from a very large number of my brother-officers—matrons are not altogether an evil; like adjutants and brigade majors, they are at the worst necessary evils, at the best quite good sorts. But there is one matron-habit that should be dealt with sternly by regulation. If a very pretty nurse is posted to a hospital, Matron generally manages to assign her to the sick sisters' ward.

"What reconciles one to Matron is the discovery sooner or later that despite silk gown and awe-inspiring manner, she is at heart still 'Sister,' ready with skilful aid and encouraging sympathy in case of need. It is a nice etiquette that makes the title 'Sister' general, for it is just sisterly affection which makes the atmosphere of a military hospital so cheering and recreating."

BOOK REVIEWS

Mentally Deficient Children, Their Treatment and Training. By G. E. Shuttleworth, B. A., M. D., etc. Fellow of King's College, London; Hon. Consulting Physician (Formerly Medical Superintendent), Royal Albert Institution, Lancaster, for the Feeble-Minded of the Northern Counties; "Special Schools" Medical Officer, Willesden Education Committee; and Medical Expert, M. A. B. Institution for Improvable Imbeciles, Ealing; and W. A. Potts, M. A., M. D., etc., Medical Officer to the Birmingham Committee for the Care of the Mentally Defective; and Chairman of the After-Care (Special Schools) Committee, Birmingham. Fourth edition. Pp. 284, with 28 illustrations. Cloth, price $2.50 net. P. Blakiston's Son & Co., Philadelphia, 1916.

This little book, first published twelve years ago, has been translated into French and Japanese. This, the fourth, edition has been largely revised and rewritten. It contains a brief historical sketch of the education of mental defectives; a pathological classification of forms of mental deficiency; a discussion of etrology, diagnosis, and prognosis, and of the psychopathies of puberty; an outline of general, medical, and surgical treatment, and of educational, industrial, and moral training. As the authors are English, the book is naturally written from a British point of view so far as institutional work is concerned. The work done in the United States in the care of the feeble-minded and scientific investigation of their condition has not, however, been overlooked. The work contains a large amount of useful information on this subject.

Where Garments and Americans Are Made. Story of Sicher System of Factory Education for Americanization of Foreigners, conducted in cooperation with New York Board of Education—A Challenge to Hyphenatism. By Jessie Howell MacCarthy, formerly teacher at Pratt Institute and Hebrew Technical School for Girls, New York City. Pp. 57, with 6 illustrations. Cloth. Writers' Publishing Co., New York, 1917.

New York, according to Dr. J. H. Finley, of the New York State Board of Education, is the only state in the Union that has not decreased its illiteracy in the last ten years. This will not continue to be true if the plan introduced by Dudley D. Sicher into the garment factory of D. E. Sicher & Co. is widely adopted. As explained in this little book, Mr. Sicher has organized in the factory of his company a school where girls are taught, during actual working time, the English language and the elements of citizenship and of practical American living by a teacher from the New York public schools. It is said to be "perhaps the only factory school in the world where pupils are paid while learning." For three-quarters of an hour a day each pupil receives practical instruction and at the end of thirty-five weeks the pupil is graduated, in a gown made by herself, with ability to read, write, and speak English and with knowledge of how to use American money, how to write a letter, how to find her way about the city, how to buy and prepare food, something about practical hygiene and the important ordinances of the health and tenement housing laws and the traffic regulations which bear on her own welfare and that of her family. The welfare work of D. E. Sicher & Co. was described by Mrs. Claribel G. Hill in the May number of THE MODERN HOSPITAL (p. 351).

A little essay volunteered by a pupil of the school is reproduced in this little volume, with the author's spelling, construction, and capitalization unaltered. The writer testifies:

"There are many nice and pleasant things what you never find in another factory, it is wrong expression if I say factory because the people they are working there are like a big family. . . .

"It gives me so much pleasure since I am able to read write and speak English that I can say the World is much nicer for me."

The book is not for sale, but is published for free distribution as long as copies last.

Books Received for Review

Handbook of Anatomy, a Complete Compend of Anatomy. Including the Anatomy of the Viscera, a Chapter on Dental Anatomy, Numerous Tables, and Incorporating the Newer Nomenclature Adopted by the German Anatomical Society, Generally Designated the Basle Nomenclature, or BNA. By James K. Young, M. D., F. A. C. S., Professor of Orthopedic Surgery, Philadelphia Polyclinic; Associate Professor of Orthopedic Surgery, University of Pennsylvania; Orthopedic Surgeon to the Philadelphia General Hospital, etc. Fifth edition, revised and enlarged. Pp. 435, with 154 illustrations. Cloth, price $2 net. F. A. Davis Company, London, 1917.

The Starvation Treatment of Diabetes, With a Series of Graduated Diets. By Lewis Webb Hill, M. D., Junior Assistant Visiting Physician, Children's Hospital, Boston; Alumni Assistant in Pediatrics, Harvard Medical School; and Rena S. Eckman, Dietitian, Massachusetts General Hospital, Boston, 1911-1916; with an Introduction by Richard C. Cabot, M. D. Third edition. Pp. 134. Cloth, price $1.25. W. M. Leonard, Boston, 1917.

Principles of Medical Treatment. By George Cheever Shattuck, M. D., Assistant Physician to the Massachusetts General Hospital. Third edition, revised and enlarged. Pp. 225. Cloth, price $1.50. W. M. Leonard, Boston, 1916.

Standards of Health Insurance. By I. M. Rubinow, M. D., Ph. D., Executive Secretary Social Insurance Committee, American Medical Association; Author "Social Insurance," "Standard Accident Table," etc.; Lecturer on Social Insurance, N. Y. School of Philanthropy, 1912-1915; President Casualty Actuarial and Statistical Society of America. Pp. 322. Cloth, price $1.50. Henry Holt & Company, New York, 1916.

Social Diagnosis. By Mary E. Richmond, Director Charity Organization Department Russell Sage Foundation, Author of "The Good Neighbor," etc. Pp. 511. Cloth, price $2.50. Russell Sage Foundation, New York, 1917.

English-Italian Phrase Book for Social Workers. A Phrase Book for the Use of Social Workers, Teachers, Physicians, and Nurses. By Edith Waller. Pp. 178. Paper, price $0.75. Edith Waller, Morristown, N. J., 1916.

English-Italian Phrase Book for Social Workers, Physicians' Supplement. By Edith Waller. Pp. 19. Paper, price $0.25. Edith Waller, Morristown, N. J., 1916.

A System for Case-Taking, With Explanatory Notes. By George William Ross, M. A., M. B. Tor., M. R. C. P. Lond. Demonstrator in Clinical Medicine, University of Toronto Assistant Physician, Toronto General Hospital; and Julian Loudon, B. A., M. B. Tor., M. R. C. S. Eng., L. R. C. P. Lond., Assistant in Clinical Medicine, University of Toronto, Assistant Physician, St. Michael's Hospital, Toronto. Pp. 69. Flexible cloth, price $0.50. The Macmillan Company of Canada, Ltd., Toronto, 1916.

QUERIES AND ANSWERS

Cut-and-Dried Hospital Plans

To the Editor of THE MODERN HOSPITAL:

We shall be grateful if you will send us sample plans for a fifty-bed hospital; we are planning a new building to take the place of our old one and would like to look over several plans. A WESTERN HOSPITAL.

We are more than glad to send you plans of several fifty-bed hospitals, and are doing so, but we warn you against too great a reliance on any such samples. The wise way for you to proceed is to employ an architect who has had experience in the building of small hospitals and be guided by his judgment. Conditions are not the same in any two localities and the problem differs with every new institution. What would seem an excellent hospital in one place, and for one set of conditions, would be impossible for another. It seems to us the best way is to employ an architect of known experience and skill and honesty and submit your problem to him. If he runs across conditions upon which he needs the advice of a hospital consultant, he will know where to find such advice, and it is the business of your board to pay for such advice when asked for by your architect.

Waste-Paper Profits

To the Editor of THE MODERN HOSPITAL:

Will you kindly give me information regarding profits in baled paper? What paper-balers on the market make for greater and more profitable results? Does the section of the country determine market value of the above product? Any information along this line will be greatly appreciated. A MONTANA HOSPITAL.

That part of your question in which you ask whether the section of the country makes any difference in the value of waste paper is the keynote of the whole thing. Baled waste paper sells, in the Chicago market, at $10 per ton. The freight rate from Montana to Chicago on that class of goods is approximately $10 per ton. If you sold to Kansas City you would have a shorter haul and a lower freight rate, but you would also get a lower price, and the same would be true of any other market in which you sold.

Hospitals that are near a large market where the freight rate is very low could afford to bale their paper, but you cannot afford to bale yours. There are a number of paper-balers on the market. Albert Pick & Co. of Chicago have a very good one that the hospitals buy; also the Ypsilanti Hay Press Co. of Ypsilanti, Mich., and Birmingham & Seaman of Chicago.

Salary of Pathologist

To the Editor of THE MODERN HOSPITAL:

What salary do you think should be paid for a full-time pathologist and bacteriologist in a western Canadian hospital of 180 beds? Pathologist is to be a thoroughly competent man and fully qualified by at least two or three years' experience in the work. Although we desire from the first a man who is competent to give an opinion of value, yet we expect the position to become more remunerative as the department is developed.

Thanking you for your valued advice,

A WESTERN CANADIAN HOSPITAL.

You can probably obtain the services of a young and very excellent pathologist and bacteriologist thoroughly trained in a good school, but without very much experience as director in an institution like yours, for $1,500 or $2,000 a year, and if you want such a man the best way for you to proceed would be to apply to Dr. W. T. Councilman of Harvard, Dr. William H. Welch of Johns Hopkins, Dr. Ludwig Hektoen of Rush Medical School, Chicago, Dr. Simon Flexner of the Rockefeller Institute, or Dr. Adami of McGill University, Montreal, all of whom are constantly bringing out young men of fine training.

We think that if we were in your place, however, we would prefer to pay $3,000 or $4,000 to start with and get a man of considerable clinical experience, who would at once impress himself on your physicians to an extent that would encourage them to go to him with their problems and seek his advice. We are quite sure that the patronage to your hospital would be so much greater, if you had such a man as we are thinking about, that his salary would be a negligible item.

It is certain that you will not be able to obtain the services of such a man for less than $5,000 or $6,000, as a permanent proposition; but you very greatly need just such a man in your community, and his influence would spread all over western and central Canada.

No Vacations This Year?

To the Editor of THE MODERN HOSPITAL:

Our trustees, some of them, are beginning to talk about not giving vacations this year to the people in the hospital, on the ground that expenses everywhere are so high that the hospital cannot afford to hire substitutes for those on vacation; they argue that we all ought to be willing to do our "bit" by staying on the job.

I greatly fear that we are going to suffer for such a short-sighted policy, but what can one do?

A NEW ENGLAND HOSPITAL.

Enthusiasm for the war and patriotism and foresightedness are all admirable qualities, but sanity and horse sense are also worth something. Your trustees are undoubtedly afflicted with the same sort of hysteria that seems to be epidemic all over the country. It is not going to get us anything to allow ourselves to grow excited, and, if this is to be a long war, with huge burdens and many sacrifices, we had better get into training for it by the practice of the sanest sort of common sense. The very fact that hospital superintendents are being compelled to practice administrative economies greater than ever before means already an extra burden of work, and if that superintendent and the department heads under him or her are to measure up to the necessities of the hour, they must be in good mental condition to do so. One cannot do one's best when tired out and stale. It would be far wiser for your board of trustees to lengthen the vacation this year than to cut it out. The latter is a short-sighted and very unwise thing to do, and the hospital will pay for it in the quality of work done if your board persists in its determination.

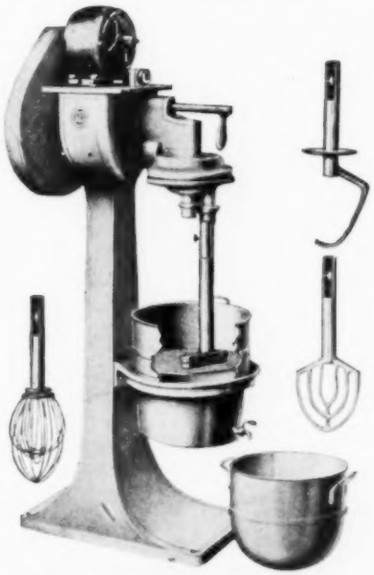
Miss Nina A. Smith, for the last two years superintendent of nurses at the Mary Fletcher Hospital, Burlington, Vt., has resigned this position to take up work on hospital administration at the summer session of Columbia University.

NEW INSTRUMENTS AND EQUIPMENT

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

A New Kitchen Machine

At a time like the present, when there is a great scarcity of competent help in every line of endeavor, labor-saving machines will be more in demand than ever, not only in manufacturing establishments, but also in public institutions and hospitals. Many of the larger institutions have long ago learned to appreciate the value of such labor-saving devices in their laundry departments and in the kitchens, but to the smaller institutions the cost of some of these machines seemed to be out of proportion to the value that might be derived from the use of them. Recently, however, the Read Machinery Company has put on the market a machine under the name of the "Read Jr. Three-Speed Kitchen Machine," and the cost of this apparatus seems to be within the reach of the smaller institutions. The machine is operated by a quarter-horse-power motor, direct drive, mounted at the head of the machine. It can be operated by simply attaching the plug to any electric light socket. This is a very important point, as considerable expense is saved in wiring. The machine has three speeds, which can be changed without stopping the motor, and the accessibility of the starting, stopping, and speed-changing handle is an important point in the saving of time and labor. The manufacturers state that the machine will mix, beat, cream, or whip any batch of material in one-third or less time than what is required by hand labor, and will do it better in every case.



A kitchen machine for mixing, beating, creaming, or whipping material with a double-motion beater.

The motion of the beater is known as a planetary one in that, while it revolves around in the circumference of a 15-quart bowl, it also has a double motion, turning on its own axis, rapidly spinning while it moves. This feature seems to be the most efficient part of the machine in that the double motion of the whirling beaters effectively whips the entire contents of the bowl. The bowls and beaters are interchangeable, and the machine is guaranteed to be practically nonbreakable, and, with average attention as to cleaning and oiling, its life should be unlimited.

Parresine—A Dressing for Burns, and Method of Its Scientific Application

In former issues of this journal we called the attention of the readers of this department to the fact that not all men of genius are at work devising new engines of destruction, as a result of the terrible war that is raging in Europe, but that many new apparatus and devices have been invented to aid the men who have lost some parts of their bodies, such as arms, legs, and even an ear or the nose. In the former instances the patients are fitted with cleverly constructed artificial arms or legs which will help them to follow their calling again or take up some other line of work that will make them partly, if not entirely, self-sustaining. In the latter instances, where such a member as an ear or the nose has been lost, the purpose is to supply these men with an artificial substitute so that they may again mingle with their fellow men without feeling themselves to be a disagreeable sight and an object of pity.

Fig. 1. Burn being dressed with Parresine.

Fig. 2. Parresine atomizer.

In the field of medicine and surgery there have been many innovations, but the two which have attracted the most attention are Carrel's method of wound sterilization by means of Dakin's hypochlorite solution and Dakin's improved new chlorine-carrying antiseptic (put on the market in this country under the trade name of "Chlorazene") and

a paraffin dressing for burns as applied in the French war hospitals. Paraffin mixed with various other ingredients, used either as a poultice for rheumatism or neuritis or a covering for burns, is by no means a new treatment and it is stated that a French surgeon, Dr. Barthe de Sandfort, first reported the method about ten years ago, but there never was such an extensive opportunity for its use as during the present war in Europe. From various sources we learn that very satisfactory results have been obtained in cases of burns, whenever this dressing has been carefully and scientifically applied.

Under the trade name of "Parresine" the Abbott Laboratories of Chicago have put on the market a wax-like substance containing approximately 95 percent of paraffin,

Fig. 3. Application of Parresine dressing with an atomizer.

2 percent eucalyptol, treated by the addition of a vegetable wax and a mineral and a vegetable resin to modify its physical character, especially as regards plasticity, pliability, and adhesiveness.

Parresine, when heated, begins to melt at a temperature of 114° to 117° F., becoming completely liquid at 120° F. It is marketed in cakes weighing approximately from 1 to 2 pounds each.

The preparation is used only in the hot liquid state. While it is sterile itself when melted, the usual care should be taken to prevent bacterial or other contamination. The ordinary "double boiler" serves the purpose of heating admirably when a more elaborate apparatus, such as the Parresine atomizer (Fig. 2), is not available.

Fig. 4. Properly applied Parresine dressing.

It is pointed out by surgeons who have made extensive use of this method that, while the wound should be clean, it should never be rubbed, but should be treated throughout as tenderly as possible, so as not to disturb or injure any particle of epidermis which may become a nucleus for the development of new skin. If the burn is a fresh one, simply flooding it with a weak solution (0.125 to 0.25 percent) of Chlorazene (Dakin's solution) is sufficient.

In seriously infected burns, after flooding with Chlorazene and drying, it is desirable to apply with an atomizer, prior to using Parresine, a spray of Dakin's new oil-soluble antiseptic, recently described in the *Journal of the American Medical Association* under the name Dichloramine—T. This is dissolved in chlorinated eucalyptol, and diluted to a strength of 2 to 5 percent with chlorinated paraffin oil. This antiseptic can be used in a concentration twenty to forty times as great as Dakin's hypochlorite solution, and its antiseptic action is continuous. Dichloramine—T and chlorinated eucalyptol and chlorinated paraffin oil (the two latter made up according to Dakin's formulas) are likewise supplied by the Abbott Laboratories.

Before applying the Parresine dressing and thin layers of absorbent cotton, the injured part should be rendered perfectly dry. This can most easily and quickly be accomplished with the aid of an electric hot-air hair drier, but where such an apparatus is not available the physician may dry the wound surface by gentle applications of hot folds of sterile gauze, followed by fanning with a clean towel or fan.

The liquid preparation should be applied at the temperature of from 130° to 140° F., and an apparatus such as is shown under Fig. 3 is very satisfactory for the purpose; where this is not available, however, it may be applied with a fine varnish brush from 1 to 2 inches in width.

Fig. 4 shows a properly applied Parresine dressing.

The R. U. V. Ultra-Violet Sterilizer

The problem of sterile water for the operating room is one which for years has been giving designers of hospital equipment much opportunity for improvement. The method most employed is, of course, boiling, but there are objections, especially in warm weather, against using more heat in the sterilizing or operating room than is absolutely necessary. The subject of sterilized filtered drinking water in hospitals is one which has not had the attention it deserves. It would seem that pure drinking water surely should be of first consideration when it is recalled that the average "pure" water from wells, springs, etc., is polluted with disease-bearing bacteria.

Absolute sterilization of water may be quickly and cheaply accomplished by means of the ultra-violet ray sterilizer now being commercially produced. The sterilizer consists essentially of a container through which the water is passed, being connected up with existing water-pipe lines, and a special type of lamp which generates ultra-violet rays. Scientists have known for many years that sunlight has the power of partially sterilizing water, and that some of its invisible rays form the active agent in this work. These rays were segregated, measured and named "ultra-violet," since they occur beyond the visible violet rays in the spectrum. Research on these rays developed many interesting facts, among them being their great value as a bacteria destroyer. Eminent men toiled for years to construct an economical and practical method of producing ultra-violet rays and applying them to the great work of sterilization. Their efforts developed the quartz mercury vapor arc lamp and the ultra-violet ray sterilizer. Ultra-violet ray sterilizers approach this ideal condition to an admirable extent. Roughly, they are classified into two groups—the E or pressure type and the B or open type. The actual installation of either type consists of piping the water supply to the sterilizer, carrying from it the service line, providing a drain connection, and connecting up with electric current wires. Starting and stopping both the flow of water and electric current at the sterilizer is thereafter automatic in types of apparatus in which this feature is desired, controlled by opening or closing the electric current switch. For the information of those technically inclined, the lamp is tilted automatically as well.

Sterilizers of both types are fitted with quartz tubes, which are inserted into the body of the sterilizers and around which the water is caused to flow at a predeter-

mined velocity, and in a film of fixed depth. Inside these quartz tubes are placed the mercury vapor arc lamps. Ultra-violet rays projected by the lamps strike and penetrate the water in a scientifically correct manner, and are afforded proper opportunity to annihilate the bacterial content. Sterilization, it is seen, is thereby obtained without use of heat or chemicals, and the resultant sterile water in nowise differs from the original raw water except in sterility; the taste, temperature, color, mineral content, and all physical and mineral properties remain as before treatment.

The exact phenomenon of the bacteria destruction is not known. The contention of modern scientists, however, that the ultra-violet rays first produce a coagulation of the protoplasm, which results finally in an entire disappearance of the body of the germ, is, to all practical purposes, correct. Conscientious, exhaustive tests have proved decisively that the bacteria are killed, that they are not stunned with possibility of future recovery, and that this bactericidal action is due to the ultra-violet rays, and not through the medium of oxidation by chemicals formed by contact of the rays with the water, or by any other indirect means. The temperature of the water exercises no influence over this work, since the same bactericidal action is found when clear ice is subjected to ultra-violet rays as when water at any temperature is exposed.

Genitourinary Table

A urological table, suggested by Dr. Wm. Braasch, Rochester, Minn., on the gradual development of which a great deal of time and thought has been expended, is shown in the accompanying illustrations. The seat of this new genitourinary table is made of steel and porcelain enameled. It is slightly concaved and hollowed out in front; the shape of the seat and the raised rim assure proper drainage. The drain pan under the seat is made of

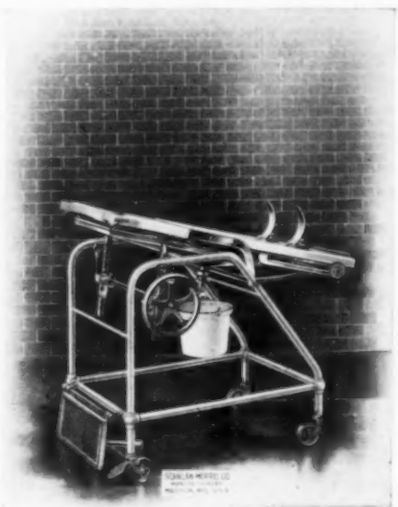


Fig. 1. Genitourinary table.

noncorrosive metal, and, working on slides, can be brought forward during irrigation or can be pushed back entirely out of the operator's way when not in use. The seat can be readily raised or lowered to suit the convenience of the operator by means of a hand wheel and ratchet while the patient is on the table. The back and front drop leaves are of steel and porcelain enameled, and the front drop leaf can be removed when not required. The range of adjustment and the ease with which the adjustment can be made seem to make this an ideal table for the use of the genitourinary surgeon, especially in his cystoscopic work.

The knee crutches are a modified form of the Bierhoff type. Shoulder crutches are also provided, and can be removed from the table when not in use. A footstool is a

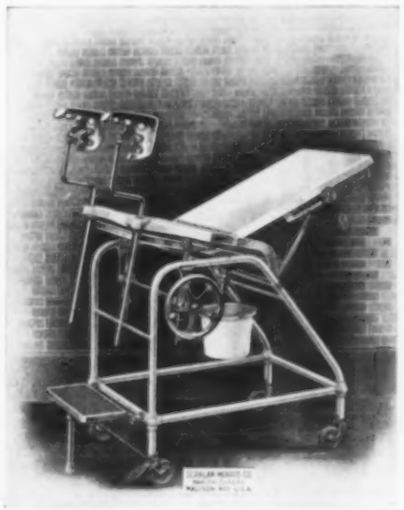


Fig. 2. Genitourinary table.

part of the table, and can, after the patient is in position upon the table, be dropped out of the way. The frame of the table is made of steel tubing and finished in white enamel, while all working parts are nickel-plated. The table is mounted on four large rubber-tired casters, two of which are provided with a locking device to prevent it from moving.

Only two of the positions obtainable are illustrated. It is a fact, however, that all positions useful in urological work can be secured, and the table is serviceable as well for gynecological and general office work.

New Instruments for Testing Acidity and the Presence of Albumin in the Urine

The urine acidometer illustrated here (Fig. 1) has been devised by the manufacturers of the well-known Tycos products.

The instrument is graduated to read directly the percentage of acidity (decinormal sodium hydroxid reaction). It is marked at 5 c.c., 10 c.c., and above to 100 percent in 2 percent divisions. There is a strip of white glass on the back of the tube to enable a high degree of accuracy in reading.

The directions for making test for acidity are given as follows: Fill the tube with urine to the 10 c.c. mark and add two drops of a 1-percent aqueous solution of phenolphthalein. Close the tube with the thumb and invert several times to mix the contents. Now add decinormal sodium hydroxid solution, drop by drop, inverting the tube after each addition, until the color has changed to a light rose pink. This marks the end reaction. The percentage of acidity is now read off the tube at the level of the fluid.

In concentrated urine, where the acidity is above 100 percent, the tube should be filled to the 5 c.c. mark with urine, and water to the 10 c.c. level. When such dilution is made the reading is, of course, doubled.

The average acidity of a mixed twenty-four-hour specimen of urine is between 30 and 40 percent.

To determine the total acidity, multiply the percentage of acidity of a mixed twenty-four-hour specimen by the number of cubic centimeters voided; for example, acidity, 30 percent; amount voided in twenty-four hours, 1,500 c.c.; total acidity equals 30×1,500 or 45,000 percent.

Fig. 2 illustrates the Pfeiffer Albuminometer. Pfeiffer's method of determining albumin in urin is considered very reliable for comparative clinical work. The Tycos improved form of this albuminometer is cone-shaped at the bottom, thus enabling a quick and accurate reading of small quantities of precipitate. The tube is accurately graduated as follows: To 3 c.c. in 0.1 c.c.; 3 to 5 c.c. in 0.2 c.c.

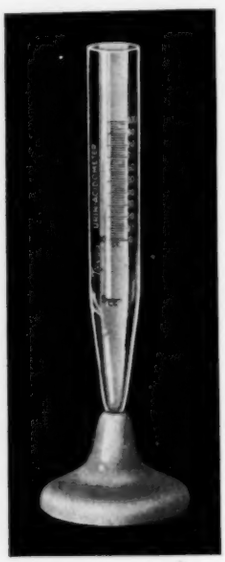


Fig. 1. Urine acidometer.

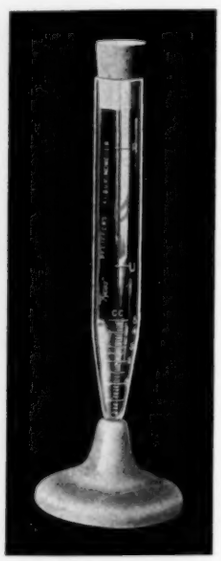


Fig. 2. Pfeiffer albuminometer.

The directions given for making tests for albumin with this instrument are as follows:

The following reagent (Tsuchiya's) should be kept in stock:

Phosphotungstic acid	5 percent
Hydrochloric acid, Con.	5 percent
Alcohol	95 percent

Place 10 c.c. of urine in a tube and add 10 c.c. of the reagent. Stopper the tube and invert it several times, then stand aside twenty-four hours at room temperature. Read off the precipitate and from the following table of equivalents calculate the parts of albumin in each liter of urine.

Table as given by Pfeiffer is as follows:

0.5 c.c. ..... 1.00 parts per mille.	1.8 c.c. ..... 2.80 parts per mille.
1.0 c.c. ..... 1.50 parts per mille.	2.0 c.c. ..... 3.20 parts per mille.
1.2 c.c. ..... 1.75 parts per mille.	2.2 c.c. ..... 3.60 parts per mille.
1.4 c.c. ..... 2.00 parts per mille.	2.4 c.c. ..... 4.00 parts per mille.
1.6 c.c. ..... 2.40 parts per mille.	

Sterilized Hot Water From Cold-Water Pipes

Under the trade name of the Geyser Electric Water Heater there has recently been put on the market an apparatus which, according to the manufacturers, will produce hot and cold water instantly from the same faucet and, what is more, will sterilize the water from the cold-water pipes. This apparatus is said to make it possible to secure, without coal or gas, at any time, a supply of sterilized hot water or cold water by simply turning an ordinary faucet handle.

This feature should make this apparatus especially useful in the operating and dressing rooms of small institutions which may not have been originally built for hospital purposes, as well as for surgeons' and dentists' offices, laboratories, and bath rooms.

The "Geyser" heater is made to fit various conditions and in several degrees of capacity. It has a compact form,

Geyser electric water heater for securing sterilized hot water from cold-water pipes.

is neat in appearance and can be fitted to any ordinary supply pipe. There is but one faucet and when this is turned to the right cold water flows from the spigot. When it is turned to the left, the electric current is turned on and the hot water flows.

The manufacturers guarantee that this electric water heater is perfectly insulated and that the construction is such that there can be no danger of electric shock or fire from short-circuiting.

The Department of Public Charities of New York City, is having plans prepared for a complete new plant for the Cumberland Street Hospital in Brooklyn, which it is said will be the most up-to-date institution in that city, both in its architecture and arrangement and in the way of new and improved facilities for the care of patients. The entire plant, including heating, food service, ward service, help, nurses, and staff quarters, will be under one large terraced roof with Solaria and open porches for open-air cases and convalescents. The hospital is to be arranged so that neither the bringing in of patients nor the removal of bodies will be within view of either the patients or the public. The arrangement of beds in the wards will be unusual. There are to be twenty-four beds in each ward, divided into six groups, with clear plate glass between, permitting an unobstructed vision of the entire ward. Small laboratories will be fitted up on each floor, adjacent to the operating rooms. Food and dishes will be sent on heated trucks direct from the kitchen to the patients' beds. The hospital will have a capacity of 312 beds.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Canning in the Hospital

Now that we are talking about economies, especially in the food department, why not think about doing a little canning in the hospital? Generally the hospital steward or buyer has access to the best markets and the best prices in the markets, and generally he or she has some individual on the market who would be glad to give him or her a hint when some specially good bargain comes along. For instance, there may be a glut of strawberries on Saturday. These strawberries will not keep over Sunday and the market would be off Monday even if they did keep. The dealer would like to get rid of them and would make a substantial sacrifice in the price. Who could handle such a matter better than a hospital? With the right sort of inspiration a good many convalescent patients would regard it as a great treat to be permitted to help stem strawberries, and the dining-room help would be more than glad to jump in and help in an emergency.

Working in this way and taking advantage of the markets somewhat after this fashion, hospitals ought to be able to put up an immense amount of preserves, jellies, and perhaps some canned vegetables, most economically. If there is a good cook or dietitian in the institution the quality of the preserves or canned articles will be better than can be bought from regular dealers.

Already many sanitariums, state hospitals, county farms, and hospitals having country branches are putting up vast quantities of fruit and vegetables. Some of them are even going to the extent of canning some of the things to sell where there is a superabundance on hand.

Dainty, Skillful Carving as a Hospital Economy

The prices of meats have gone up approximately 25 percent in the last year and in many cases 50 percent. We have a story this month from Dr. Frederic Brush's institution, the Burke Foundation, in which the patients are compelled to do with less meat than they have been accustomed to and the doctors are finding that the patients do as well, or even better. Many of us will reply to this hint that "our patients will not be dictated to and they will send back if we do not send them enough the first time, and they will raise a row, if they can, for all the meat they want."

There is an old saying among food caterers that "American people eat most with their eyes." This is no doubt eminently true; in other words, imagination has a great deal to do with our appetites. If we see on our plate a slice of meat almost covering the plate, and if the slice looks appetizing and is nicely served and garnished, we are very much disposed to accept what we see for the face value of that slice of meat and we are very unlikely to look underneath or to turn it over to investigate its thickness.

The hint here is that if our roasts are daintily carved, with a very sharp knife, and if they are served with a garnish of some sort, or perhaps a small amount of juice or gravy, about half the amount will suffice.

Investment of Earnings

What do hospital superintendents and department heads in hospitals do with their earnings? This thought comes to us because recently we learned of a splendid head nurse in one of our hospitals who had saved two or three thousand dollars and who had been victimized out of the whole amount in some scheme of high finance.

To the world of crooks professional people generally are known to be easy marks or "suckers." The medical profession has generally been accredited with the post of honor in the army of suckers and we are wondering whether their laurels are not in danger at the hands of hospital administrators and department heads.

The reason why professional people are not good business managers is because their thoughts are devoted to other things and because they have not taken the time or spent the energy or acquired the experience to learn business methods and business customs and to evaluate business enterprises. Fortunately the hospital superintendent and department head has usually a board of directors, made up of the sanest and most successful business men in the community, and there is nearly always one or more board members who would be more than pleased to advise hospital people as to the investment of their funds. If we are sick we go to a doctor, if we need shoes we go to a shoe house; then why, when we are dealing in finance, do we not go to someone who is supposed to know something about finances?

Laundry Soap as a Substitute for Scrubbing Soaps

In these days when potash soaps are pretty nearly a negligible quantity it is necessary for hospitals to do some substituting. Our scrub people use entirely too much soap everywhere and all the time. A good way to supply scrubbing soaps and soaps for the general use of the janitor service is to use the laundry soap from the regular chips. Take the boiled soap that has been allowed to cool and solidify and give it to the janitors and scrub people in very small quantities. Housekeepers will find it by far the cheapest way; the laundry soap is a very excellent substitute for the potash or so-called green oil soaps.

Demand Good Recommendations

Now that thousands of young men are being taken out of civil life, the wages of those who are left behind are going to increase and the hospitals are going to find themselves under the necessity to get along with a poorer quality of domestic help or a small number or to pay higher wages; the one sure thing is that a less competent class of people are going to offer themselves for hospital places, and, in our anxiety to get people, we are liable to make costly mistakes. We ought in every case of an applicant for employment to insist on good recommendations from the right sort of people, and we ought to go behind these recommendations in every case and communicate with the person whose name is being used as a recommendation and find out all about the applicant. It is a very vicious habit with hospital people to give undeserved recommendations. Many superintendents will dismiss a man or woman for the very best of reasons and then give him or her a recommendation—which is not a fair thing to other people who may be asked to employ them. Not long ago a well-known hospital administrator dismissed one of the domestic help for petty thieving. He ought to have prosecuted the person, but instead of that he went to the other extreme and gave the man a letter of recommendation which served to obtain employment for him in a nearby hospital.

We ought to be very careful about bestowing recommendations and we ought to demand exceptional recommendations even of the cheaper down-stairs help.

LIGHT AND ITS EFFECT ON HEALTH

The Lighting Problem in Hospitals—Brilliancy of Modern Artificial Illuminants Dangerous

When we consider that the human eye became adapted to a brightness not exceeding 8 candle power per square inch from exposed light sources for centuries, and that today it is subjected to brightness far in excess of 3,000 candle power per square inch from illuminants with concentrated filaments and gas-filled bulbs, the prosperity of oculists and the predominance of tinted eye-glasses ceases to be a mystery.

The human eye has been shaped by use. In early days a wick of hide soaked in oil or tallow gave the light by which work was performed at night, and since then, for hundreds of years, the human eye has been accustomed to a certain brilliancy of low degree and yellow color. This period covers the advent of the oil lamp, candle, gas flame, and first electrical lamp. Then came an abrupt and tremendous change with the development of the tungsten metallic filament. Although the first electric lamps were more brilliant than the candle, oil lamp, or gas flame, still the color was yellow, the same to which the eye had been accustomed for centuries, and hence the increase in brightness was mitigated to some extent. With the advent of the tungsten lamp, the eye was exposed to an intrinsic brilliancy of over 1,000 candle power per square inch, or two hundred times greater than it had ever been accustomed to since the world began, and since then the brilliancy of these eye-destroying illuminants has even further increased.

The retina is most accustomed to light rays which enter the eye in a horizontal direction, as from windows. One may regard a candle on a level with the eye without discomfort, but, when the candle is raised a few feet above the head or placed upon the floor, a very uncomfortable ocular sensation is apparent. The same discomfort is noticed when a man changes from a straw hat to a derby with its narrower rim, or again, when light is reflected acutely from a snow-covered pavement into the eye. In all these instances, the light enters the eye at an unusual angle and excites sections of the retina unaccustomed by usage to such stimuli. The eyebrow as a protection from this source of eye trouble is exactly similar in action to the straw hat brim. If the candle is raised above the head to such a point that no direct rays enter the eye, owing to the interception of the eyebrow, an immediate and grateful sensation of relief results, even with the mild and inoffensive candle. The experiment mentioned, slightly modified, affords an excellent method of instantly determining whether the lighting of any room is physiologic. Place the hand like a visor above the eyes and from beneath look straight across the room. Then remove the hand. If the directional effect described prevails, an intense relief will be immediately felt when the hand is replaced.

The light source which is non-injurious is one which can be regarded without squinting or brow puckering. We can look at a candle, an oil lamp, or a gas flame without ocular discomfort because of their low brilliancy and yellow color.

There is no best or universally applicable system of lighting. Every lighting problem requires special treatment, meeting the local and special requirements.

To eliminate glare, no bare, glaring globes should be used in the visual field.

Under the direct system of lighting, the usual fixture employed consists of a long vertical stem with horizontal arms, at the ends of which are fitted pendant or upright gas or electric lamps. If such fixtures are hung high with bare lamps, the utilization of light from the side of the lamp is horizontal and much of it is ineffective and wasted. If the fixtures are hung low, the exposed bulbs are directly in the visual field and the resultant glare so intense that nothing can be seen instinctly.

One ready method of correcting such lighting of a room consists in extending the length of fixture stem slightly and placing below the lamp an inverted opal glass reflector of such density that at least 80 percent of the light generated by the lamp is directed upon the ceiling, and the remainder, less the loss caused by the absorption of the glass, is transmitted below to the working plane, giving an adaptation of what is known as semi-indirect lighting.

From this type of lighting the same directional annoyance can result as from direct lighting, if the redirecting mediums are placed so that their rays strike the ceiling with a wide angle of deflection. To avoid this it is necessary to design the reflector so that the light is reflected directly to the ceiling and returns without striking the side walls.

Under the indirect system the physiological factor depends on the shape and hanging of the reflector. The absence of a visible source of light is unquestionably unnatural, but this system can be modified without losing its efficiency, so that a secondary shell of glass becomes luminous, conveying, or rather, counterfeiting the suggestion of a visible source. When the sun is obscured daylight does not seem unnatural. Daylight also is white light, which the tungsten most nearly approaches. Yellow light has a preponderance of red rays, which inflame the eye. The advantage of the semi-indirect system lies in its efficient utilization of the flux directed upon the ceiling, but its great disadvantage is the unnatural brightness which it imparts to the upper area of the room, leaving a stratum of appreciably less brightness below. This defect is eliminated in the semi-indirect system, which restores the balance of illumination between the upper and lower strata.

Many eye troubles attributed to other causes are due to glaring lights, and, strange to relate, indirect lighting which hides the lamp from view is just as bad for the eyes as exposed bulbs unless designed and installed with the greatest scientific precision and esthetic care. This same objection applies to semi-indirect lighting where the exterior portion of the fixture is luminous.

In the lighting of hospitals many reforms are necessary. The dangerous brilliancy of some lamps has made the lighting of hospital wards a matter of deep study. In the operating room, too, it is possible to use these glare-producing illuminants in such a way as to obtain the maximum effect with the least expense. Those who are building should bear in mind that important changes now taking place in the development of illuminants will be in evidence within the next five years and will render obsolete and worthless all lighting equipment which has not been specially designed to meet these changes. With a system designed by a lighting specialist, the efficiency, economy, and utility of the system will remain constant.—BEVERLY S. KING AND ASSOCIATES (F. L. GODINEZ, lighting specialist).

Miss Delphine Hines, R. N., has lately assumed the duties of superintendent of the nurses' training school at the Trinity Hospital, in Milwaukee. Miss Hines is a graduate of St. Mary's Hospital, Rochester, Minn., and has done post-graduate work in the University of Minnesota Hospital, Minneapolis, and Mount Sinai Hospital, New York City.

A Dietetic Ideal Realized

At last! A practical Whole Wheat Food

WHOLE GRAIN WHEAT brings Nature's most complete food to you in a palatable, ready-to-eat manner. It is the first whole wheat food ever marketed which can be kept without deterioration until needed.

We are being asked to economize in wheat. One of the best ways to do this would be to reduce waste in the use of that grain. Do you realize that from 25 to 35 percent of the wheat grain is wasted in the present methods of preparing it for food? Why? Because flour made from whole wheat will not keep. It rapidly becomes sour owing to the presence in it of the life germ (embryo).

Nevertheless, the part of the wheat rejected in milling flour contains, in peculiarly well-balanced proportions, three kinds of matter necessary for the due maintenance of health and for growth.

These are:

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2. Mineral substances, necessary for the human body, in a form specially well suited for absorption. Some sixteen elements enter into the composition of the wheat grain, and these are the same as the sixteen elements of which the human body is made up. Among them are calcium, phosphorus, and fluorine, essential constituents of bone and teeth, and iron, which is necessary to provide for the renewal of the essential blood-pigment, hemoglobin, the basis of respiratory activity.

3. Indigestible roughage (bran), which acts as a natural stimulant to the bowel. The absence of this from our modern highly refined and too completely digestible foods is at the bottom of the almost universally prevalent constipation which is responsible for not less than 50 percent of our minor and perhaps as much of our major ailments.

From the hygienic, the dietetic, and economic point of view the great problem was to find a method for the treating of the WHOLE WHEAT GRAIN so that all its valuable constituents might be preserved without deterioration, and yet that the resulting food should be immediately available for table use. As the result of Dr. Albert Babendreer's researches, this ideal has been realized in WHOLE GRAIN WHEAT.

In order to preserve each wheat berry in all its original purity and with all its properties absolutely intact, a special process has been devised whereby WHOLE GRAIN WHEAT is placed in clean tin cans, which are then hermetically sealed. The process of cooking is not commenced until after the can has been sealed.

Nothing is added to the wheat except a little salt and sugar to increase the palatability of the grain. Nothing is taken away.

It may be served cold with cream and sugar or hot with melted butter. Also, it may be served warm by heating can in water for a few moments before opening. In combination with fruits and other food substances it is served in a variety of ways, and is tasty, appetizing, delicious, and wholesome.

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NEWS OF THE HOSPITAL FIELD

Dr. John Clark is opening a private hospital at Gilroy, Cal.

A new Japanese hospital is nearing completion in Honolulu.

Dr. W. W. Webb will soon open a hospital in Winlock, Wash.

A community hospital will be opened at Holland, Mich., this fall.

A new county hospital, erected at a cost of $20,000, was opened at Portland, Ind., July 18.

A new Catholic hospital, to be known as St. Mary's, is nearing completion at Gallup, N. M.

Dr. L. W. Wiggins, Atlanta, Ga., contemplates opening a private hospital in the near future.

The Williamsburgh Hospital, Brooklyn, N. Y., has recently opened a training school for nurses.

A $20,000 hospital to be known as the Chamberlain Memorial is being built at Rockwood, Tenn.

The Volunteer Hospital, New York City, is having plans drawn for a four-story addition to cost $75,000.

Construction work has been started on a 15-room addition to the Wabash Valley Sanitarium, Lafayette, Ind.

Henry Hunter, formerly superintendent of the county hospital at Salinas, Cal., died at his home in that city June 25.

California has a new law requiring an x-ray photograph to be made of a broken limb both before and after it has been set.

St. Joseph's Hospital, Lewiston, Idaho, is conducting a financial campaign with the purpose of erecting a $50,000 addition.

Mr. and Mrs. H. J. Jewel, both trained nurses, of Redlands, Cal., are arranging to open a private sanatorium at Blythe, Cal.

Plans have been made for the erection of a county tuberculosis hospital at Fall River, Mass., to have a capacity of 80 beds.

St. Vincent's Hospital, Sioux City, Iowa, has recently moved into a new modern building having accommodations for 100 patients.

The erection of a $45,000 addition to St. Luke's Hospital, South Bethlehem, Pa., has been decided upon by the trustees of that institution.

Mrs. K. Childress, of Little Rock, Ark., has lately been installed as superintendent of the Huntington Infirmary at Eureka Springs, that state.

Mrs. Bert Bell has been appointed matron of the municipal tuberculosis sanatorium at Muskegon, succeeding Mrs. Paul Grosscup, resigned.

Bids have been received by the board of supervisors of Niagara County, New York, on the erection near Lockport of a county tuberculosis hospital.

St. Elizabeth's Hospital, Appleton, Wis., will undertake to raise $300,000 this fall for enlargement. The present capacity of the hospital is 60 beds.

St. Francis' Hospital, San Francisco, has lately put into service a new $35,000 building to be devoted exclusively to

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the care of emergency and industrial accident cases. At last report sixteen beds were occupied out of the twenty provided.

Miss Anne Bremyer, of Little Rock, Ark., will have charge of a new hospital soon to be opened at Eureka, Ark., by the Eureka Hospital Company.

An architect has been engaged to draw plans for a new home for the Allegheny Valley Hospital, Tarentum, Pa., the cost of the building to be about $100,000.

A hospital erected by the Rockefeller Institute for the demonstration of the Carrel-Dakin method of treating infected wounds will soon be ready for patients.

Miss Bertha Hunter has been appointed superintendent of the county hospital at Salinas, Cal., to succeed her husband, Harry Hunter, who died a short time ago.

There are 473 hospitals, or sanatoriums, in the United States devoted exclusively to tubercular cases, and their aggregate capacity is approximately 40,000 beds.

Fire in the nurses' quarters at the Davis Hospital, Pine Bluff, Ark., recently caused a loss of $400, most of the damage consisting of the destruction of clothing.

St. Luke's Hospital, Detroit, has awarded a contract for the erection of a three-story hospital building with a two-story annex, both to be modern fireproof structures.

Miss Emma Wallenciak, of Kansas City, Mo., has recently assumed the duties of matron and chief nurse at the New Mexico Hospital for the Insane, Las Vegas.

Dr. Stevenson, Dr. John Dequer, and Dr. Jewett, all of Llano, N. M., have recently opened a hospital at that place. Dr. Dequer will be in active charge of the institution.

The Canyon Hospital, Caldwell, Idaho, was closed July 1, Mr. and Mrs. Spurgeon, who have conducted the institution for the last seven years, having planned to retire.

The Methodists of Buffalo are considering the establishment in that city of a 250-bed hospital. At present there is no Methodist hospital between Chicago and Syracuse.

An act of the last session of the New Jersey legislature provides that two women be appointed as members of the board of managers of each of the state's hospitals for the insane.

A building permit was issued to the Mercy Hospital, Pittsburgh, Pa., in July, for extensive alterations and the erection of a two-story addition, the total cost to be $89,000.

Bids have been invited on the erection of a community hospital at Orange, Tex., estimated to cost $100,000. The building fund will be donated by Mrs. Frances Lutcher, of Orange.

Mrs. Letitia Chamberlain, formerly superintendent of the school of nursing at the Pittsburgh Homeopathic Hospital, has lately accepted a position in a hospital in Panama.

A new plant for the San Bernardino County Hospital, San Bernardino, Cal., will be ready for operation about October 15. Accommodations for 200 patients are being provided.

A campaign conducted to raise $100,000 for the erection of larger quarters for the Homestead Hospital, Homestead, Pa., resulted in subscriptions amounting to over $175,000.

Hackley Hospital, Muskegon, Mich., is arranging to build a home for its nurses. Accommodations for 60 nurses will be provided and the building is estimated to cost $65,000.

Miss Julia Work, night superintendent, and Miss Harriett Ochs, dietitian, at the Beth-el Hospital, Colorado Springs, Colo., have resigned to take positions in a hospital at Lexington, Ky.

The Greenwich Hospital Association, Greenwich, Conn., plans to open some time in August a new, fireproof hospital erected at a cost of $250,000. Both the building fund and a substantial endowment were donated to the city by Commodore E. C. Benedict, a local resident. The new structure will contain 38 private rooms in addition to a

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City Hospital, Akron, Ohio.

Augustana Hospital, Chicago, Ill.

Epworth Hospital and Training School, South Bend, Ind.

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Columbus Laboratories, Chicago
(J. A. Wesener, Ph. C., M. D., Chemist)
Analytical Report, July 13, 1917

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It is soft wheat rolled—a dish which meets a universal taste.

In those flakes we now roll 25 per cent of bran. The bran is in flake form to make it doubly efficient.

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Pettijohn's Flour—75 per cent fine patent flour with 25 per cent bran flakes. Use like Graham flour in any recipe.

Both sold in packages only. (1649)

medical and surgical ward each for men and women. Among the noteworthy construction features are two fireproof stairs with fusible links to work automatically in case of fire. The nurses' signal system is said to be unique.

An addition to the Southampton Hospital, Southampton, L. I., which will increase the capacity of the institution to fifty beds and provide many improved facilities, is nearing completion.

Drs. Ezra C. and Edward A. Grimm, who conduct a small private hospital at Kirksville, Mo., are arranging to build an addition which will materially increase the capacity of their institution.

Miss Luella Francey, a Red Cross nurse, who for the last two years has been in charge of the Emergency Hospital, Salt Lake City, has recently been assigned to duty at the Mexican border.

Mrs. Grace Barrie, for several years superintendent of the Weiser General Hospital, Weiser, Idaho, has lately accepted an appointment as matron of the Hot Lake Sanatorium, Hot Lake, Ore.

The cornerstone of a new home for the Swedish Mission Hospital, Omaha, Neb., was laid with ceremonies July 15. The building is expected to be ready for occupancy by winter or early spring.

Dr. B. G. Tucker has been appointed superintendent of the Davidson County Tuberculosis Hospital, Nashville, Tenn., to succeed Dr. G. F. Aycock, who resigned to join the army medical corps.

Contract has been awarded by the Scott County Public Hospital, Davenport, Ia., for the erection of a three-story building to house its heating plant and laundry and provide quarters for its male help.

A new home for the Winchester Hospital, Winchester, Mass., was formally dedicated June 30. The building was erected at a cost of $60,000 and has facilities for the care of forty patients at a time.

Contract has been awarded for the erection of a deaconess hospital at Havre, Mont. The building will be a four-story and basement fireproof structure, costing, with plumbing and heating equipment, $66,000.

The Gonzales Hospital, Gonzales, Tex., formerly operated as a strictly private institution, has been leased for a term of three years by Miss M. L. Manson, R. N., and will hereafter be open to all reputable physicians.

St. John's Riverside Hospital, Yonkers, N. Y., is among the institutions offering free treatment to men who have volunteered for military service and have been rejected because of slight defects which are remediable.

Miss Frances Aston, superintendent of the Gilroy Private Hospital, Gilroy, Cal., for the last seven years, has tendered her resignation to become effective August 1. She will remain in Gilroy and do private nursing.

The Cochran Training School for Nurses, of St. John's Riverside Hospital, Yonkers, N. Y., graduated last month the largest class in its history. Sixteen nurses received diplomas. Mrs. J. S. Hilker has charge of the school.

Dr. Thomas H. Hay, founder of the River Pines Tuberculosis Sanatorium at Steven's Point, Wis., died at Elizabethtown, N. J., June 30. He had been ill of heart disease. Dr. Hay practiced in Milwaukee for a number of years.

Ground was broken at Waco, Tex., in July for a new institution to be known as the Central Texas Baptist Sanitarium. The first building to be erected will cost $125,000. The sanitarium will be controlled by the Baptist church.

The board of managers of the Jefferson County Hospital, Watertown, N. Y., has announced the resignation of Dr. H. H. Smith as superintendent of that institution and the temporary appointment of Dr. W. E. Deuell to fill the vacancy.

Arrangements are being made at Gabriels, near Malone, N. Y., to begin at an early date the rebuilding of Sanatorium Gabriels, which was visited by a disastrous fire a year ago last January. A number of prominent wealthy persons in various parts of the state have given or prom-

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They are highly concentrated. For instance, half a ripe pineapple is used to flavor a single Jiffy-Jell dessert.

These things are true of no other gelatine dessert. They result in jelly dainties which taste like fresh crushed fruit.

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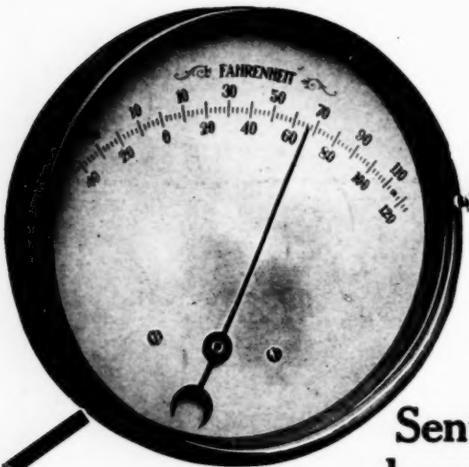

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ised financial aid with the purpose of restoring the Sanatorium to even greater usefulness than formerly, and it is understood that a plant costing between $750,000 and $1,000,000 will be developed. The main building is to be a fireproof structure of steel and concrete, five stories high. In addition there will be from 12 to 15 cottages.

An appropriation of $20,000 for the erection of a tuberculosis sanatorium at Belen, N. M., was made by the convention of the general synod of the Evangelical Lutheran Church in the United States, held in Chicago the latter part of June.

The new Benjamin Stickney Cable Memorial Hospital at Ipswich, Mass., was dedicated July 21. Although at the outset the institution is prepared to care for but 24 patients, it is the purpose of the trustees to develop a 150-bed institution.

Construction work is well advanced on a new building for the Oregon State Tuberculosis Hospital at Salem, Oregon. The structure, which is of colonial design, will be 225 feet long and 25 feet wide. Houghtaling & Dougan, of Portland, are the architects.

Miss Anna H. Davids, superintendent of the McEwan Hospital, Orlando, Fla., for the last year, has resigned this position to become manager of the children's department of the Gerry Society for the Prevention of Cruelty to Children, New York City.

Dr. Walter Morritt has resigned the superintendency of the Beth-el Hospital, Colorado Springs, Colo., after an incumbency of four years. Dr. Morritt will rest awhile and do some literary work. Further than this his plans have not been announced.

Miss Marguerite Castro, of Honolulu, has recently returned to that city from Bakersfield, Cal., to accept an appointment as superintendent of a new hospital. Miss Castro spent several months in Bakersfield nursing her brother, who was injured in an accident.

An arrangement has been made between the city authorities of Oklahoma City and the University of Oklahoma Medical School whereby the city emergency hospital will pass under control of the school and a $200,000 hospital will be erected by the state.

Contract was awarded by the King's Daughters' Hospital, Temple, Texas, July 14, for the erection of a fireproof addition to cost $40,000. The new building will add greatly to the capacity and other facilities of the institution, which now accommodates about 75 patients.

The Riverside Hospital is a new corporation at Knoxville, Tenn., organized by Drs. Victor D. Holloway, John H. Kincaid, Chas. H. Davis, S. R. Miller, and Herbert Acuff, for the purpose of establishing a hospital and training school for nurses. The capital stock is $12,000.

A court decision over the will of the late Charles M. Haines, of St. Charles, Ill., gives Mercy Hospital and the Mercy Orphan Asylum, of Chicago, a two-thirds interest in an estate valued at $1,000,000. The remaining one-third goes to the state school for boys, located at St. Charles.

Under the will of the late Mrs. Nicholas Box, of Lafayette, Ind., her estate, amounting to $150,000, will be divided between the Lakeview Hospital, Chicago, and the Children's Home in Lafayette, after the death of her husband, who is to receive the income from the estate during his life.

Dr. William H. Lawrence, Jr., general manager of Overlook Hospital, Summit, N. J., will go to France as head of the Summit Ambulance Company. During Dr. Lawrence's absence Miss Macie Knapp, the superintendent, and Miss Violet E. Kent, her assistant, will have full charge of the hospital.

The Trustees of the German Hospital, New York City, have announced a change in the name of the institution, which is hereafter to be known as the Lankenau Hospital, in memory of John D. Lankenau, who died in 1901, leaving his fortune of $1,500,000 to the hospital and the Mary Drexel Home.

The Bainbridge Hospital, a new institution, will be opened at Bainbridge, Ga., September 1, in a modern building of steel and concrete construction, now nearing com-

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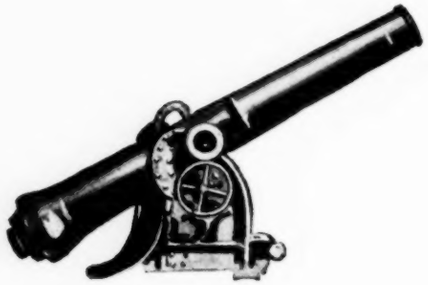

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pletion. The new hospital, with its equipment, will represent an expenditure of $70,000. Dr. A. E. B. Alford will be surgeon-in-chief.

Mr. J. H. S. Parke desires to acknowledge through the columns of THE MODERN HOSPITAL, on the occasion of leaving Montreal General Hospital, the many courtesies received from superintendents and others connected with the hospital work. He will remember with pleasure the many friendships formed.

The Alhambra Hospital, Alhambra, Cal., has been purchased by Mrs. Julia Bardwell and will be conducted by her in the future. The institution has been under the management of Miss Helen Wood and Miss Mabel Wellman for several months. Miss Wood has joined the Red Cross for service in France.

Plans are under way for a new general hospital in Columbus, O. The institution will be known as the McKinley Hospital and will be financed by a corporation composed of J. T. Daniels and others. It is reported that D. F. F. Lawrence, who now conducts a small private hospital in Columbus, will head the new institution.

Miss Gladys Tuthill, who has been superintendent of the South Side Hospital, Babylon, N. Y., since the first of this year, will leave that institution August 1 to take a position in a military hospital at Port Arthur, Canada. Miss Bernice Campbell, assistant superintendent under Miss Tuthill, will also go to the Canadian institution.

Illinois state hospital appointments were announced on July 12, as follows: Superintendent Kankakee Hospital, Dr. Eugene Cohn, formerly assistant superintendent at Dunning; superintendent Anna Hospital, Dr. C. H. Anderson, of McLeansboro, vice Dr. J. A. Campbell, resigned; superintendent Alton Hospital, Dr. Geo. A. Zeller, of Peoria.

The Grandview Hospital at Sellersville, Pa., dedicated a new $35,000 building July 15. The hospital was formerly a private one, owned entirely by physicians, but has lately been reorganized as a community institution. Dr. William J. Wilkenson is surgeon-in-chief and Mrs. Wilkenson is in charge of the nurses. A nurses' training school is maintained.

The sisters of St. Mary, who conduct Mount St. Rose Hospital, St. Louis, are planning to open a new wing to the institution in September. The building will be four stories high and will contain thirty-two rooms with open-air sleeping porches, in addition to a children's ward. There will also be a diet kitchen, baths, and a rest room for servants.

A fine new hospital building, erected in Fort Wayne, Ind., by Dr. A. H. Macbeth at a cost of more than $100,000, and equipped for general hospital purposes, has been leased by the Hope Hospital, of Fort Wayne, and is now occupied by that institution. Miss Elizabeth Springer, who had charge of the Hope Hospital in its old quarters, will continue as superintendent.

The Evanston Hospital, Evanston, Ill., has lately brought to a successful close a financial campaign by which it sought to raise $125,000 by popular subscription to meet the terms of a gift of an equal sum from James A. Patten, of Chicago, toward a fund for an addition to the hospital. Work on the new building will be started as soon as materials can be assembled, it is said.

Mr. Howell Wright, formerly superintendent of the Cleveland City Hospital, has accepted an appointment as Executive Secretary of the Ohio Branch, Council of National Defense, his services being loaned by the Cleveland Hospital Council, of which he is secretary. Although spending most of his time in Columbus, Mr. Wright is still carrying on the work of the Hospital Council.

The question of having music in the hospital for the recreation of patients is one that has puzzled many superintendents, owing to the fact that there are nearly always some patients to whom music would be disturbing and consequently harmful rather than beneficial. With the view of solving the problem of furnishing music to those who should have it without disturbing those who would be injured by it, an enterprising manufacturing concern, of Chicago, has hit upon a clever idea in the way of a pho-

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nograph with a telephone transmitter attachment, which is hooked up to an electrical wiring system reaching each private room and each bed in the wards. At each wall outlet a watch-case telephone receiver is wired in. The patient desiring to hear the musical program merely lifts this receiver to his ear.

The establishment by the American Red Cross in London of an up-to-date orthopedic hospital for American officers, the building for which was donated by William Saloman, of New York, provides what is to be the first hospital of its kind for officers. Similar institutions for privates are already in existence. The institution will treat disfigurements and deformities caused by wounds.

The new Marion County tuberculosis hospital in course of erection at Indianapolis is expected to be ready for patients by September 1. Dr. H. S. Hatch, a graduate of the University of Vermont, who has lately been employed by the Michigan State Board of Health as a tuberculosis expert, will be placed in charge of the new institution, which is to be known as the Sunnyside Sanatorium, and he is already in Indianapolis to supervise the equipment of the new plant.

Miss Lydia H. Keller, a former secretary of the American Hospital Association, whose resignation as assistant superintendent of the Asbury Deaconess Hospital, Minneapolis, was announced in THE MODERN HOSPITAL last month, has been appointed superintendent of a deaconess hospital being established at Butte, Mont., and is now in Butte to assist in supervising the erection and equipment of the buildings. The power plant and laundry for the new institution is already in course of construction and ground has been broken for the main surgical building, which will cost about $150,000 without equipment, and is designed to accommodate 80 patients.

The Missouri Pacific Railway employees' hospital association has recently purchased in St. Louis a site for a new home for its hospital in that city. Plans are being drawn for a seven-story fireproof structure, estimated to cost, with equipment, approximately $500,000. Dr. Paul F. Vasterling, chief surgeon of the present hospital, is chairman of the board of directors of the association, and will supervise the planning and construction of the new plant. The hospital is supported entirely by the employees of the road, all of whom, from the president down to the office boys, are compelled to be members of the association and contribute to the support of the hospital, assessments being made according to the salaries drawn.

The Norwood Hospital and Training School is a new private institution lately opened in Birmingham, Ala. Its home is a new three-story and basement building of modern construction, with two public wards, two private wards, and sixteen private rooms for the accommodation of patients. Three operating rooms have been equipped—two for general surgery and one for the treatment of eye, ear, nose, and throat diseases. The officers of the institution are: C. N. Carraway, M. D., president; M. E. Moreland, M. D., vice-president; Lex W. Hubbard, M. D., secretary and treasurer. Mrs. Ethel F. Hendon, who has held responsible positions in hospitals in Yonkers and Saratoga, N. Y., and Ensley, Ala., has been appointed superintendent.

Two persons were hurt in a fire which destroyed the Illinois Central Hospital at Paducah, Ky., July 10. The origin of the fire is unknown, but according to the night-watchman it broke out following an explosion. Miss Meddie Massie, a nurse, remained in the building assisting in the rescuing of patients until she was trapped by the flames. She jumped from a window and was seriously injured. Mrs. James Dorman, a patient who had been undergoing an operation, was being taken out of the building when the stretcher bearers stumbled and she was badly shaken up, suffering a relapse. The hospital was a large frame structure occupying nearly a city block. It will be replaced as soon as possible by a modern, fireproof building.

The first woman's base hospital unit in the United States is being organized for service in France. Dr. Cornelia C. Brant, dean of the New York Medical College and Hospital for Women, is secretary of the new unit, which will be offered to the War Department for overseas service, thus precipitating the issue whether this government will

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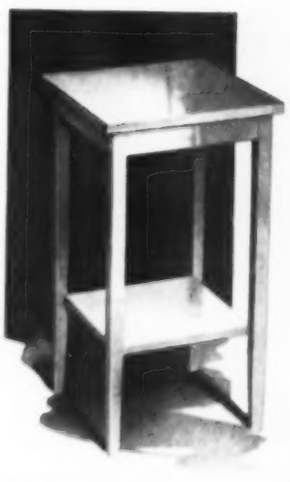

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recognize women as medical officers. The movement was launched at the convention of the American Institute of Homeopathy, held recently in Rochester, N. Y. Dr. Florence N. Ward, of San Francisco, is chairman of the organization. Dr. Sarah Hodson, of Chicago; Dr. Cora Smith King, of Washington; Dr. Margaret Hassler, of Reading, Pa.; and other well-known women surgeons throughout the country are assisting in the organization.

Norman R. Martin, by virtue of his position as superintendent of charities of Los Angeles County, Cal., has assumed full control and management of the Los Angeles County Hospital, succeeding Dr. C. H. Whitman, whose death was recorded in the July issue of THE MODERN HOSPITAL. Mr. Martin has been superintendent of the county's charities since February, 1915, and in this capacity he has had general supervision of the hospital. Dr. J. Mark Lacey, assistant medical director under Dr. Whitman, will continue as Mr. Martin's assistant in charge of the professional work of the institution. The Los Angeles County Hospital is one of the largest institutions of its kind in the West, having a capacity of 1,000 beds. Salary of the superintendent is $5,000 a year and he lives in a furnished residence provided by the county.

THE NEW GLASS BAKING WARE

War Tests Ingenuity of Chemists—Advantages of Glass Over Other Materials for Baking Vessels

When the supply of foreign-made glassware recently became exhausted and our large chemical laboratories were forced to use the American product, these laboratories were agreeably astonished to find that their breakage bills were less than half what they were before and that the glass in use was quite as resistant to acids and alkalies as was the imported glass formerly used. Two makes of domestic glass were found to be especially satisfactory as compared with the imported glass. These were found to be more resistant to chemical attack than imported glass. One of them is, indeed, considerably more resistant to sudden changes in temperature than any of the formerly prized foreign glasses.

A young chemist in one of our large glass factories was recently married. In him the instincts of a pioneer are highly developed. His young wife on Saturday wished to bake a cake for Sunday, but found she had no baking tins. Now there was in the house a glass tray made of one of the new glasses with which the factory was experimenting. The young chemist suggested that she use this. The resulting cake was the surprise of the age. The use of glass for baking purposes seems preposterous, yet it promises to be the greatest advance step of recent times in the art of cooking. Tinware, crockery, and enamelware all reflect heat to a great degree, but glassware lets heat through just as it lets light through. A cake baked in glassware is baked on the bottom as well as on the top; a pie baked in a glass dish has two crusts, one on the bottom and one on the top. And the glass withstands the heat of the baking oven without cracking.

This glass baking ware is the result of experimentation due to the shutting off by the war of our potash supplies, formerly imported from Germany. This potash was considered essential in the manufacture of the extremely tough glass used for electric light bulbs. As America is extremely rich in soda deposits and extremely poor in available potash, it was natural that our chemists should attempt to replace potash with soda. The result is the new glass, tougher and better in every respect than the old potash glass; from this new soda glass the baking dishes just described are made.

ALLEN ROGERS,
Chairman Press and Publicity Committee, American Chemical Society.